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CENTRE FOR THE STUDY OF LIVING STANDARDS

BEYOND GDP: MEASURING ECONOMIC WELL-BEING IN CANADA AND THE PROVINCES, 1981-2010

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Beyond GDP: Measuring Economic Well-being in Canada and the Provinces, 1981-2010

Abstract

This report presents new estimates of the Index of Economic Well-being (IEWB) and its four domains (consumption flows, stocks of wealth, economic equality and economic security) for Canada and the provinces for the 1981-2010 period. It finds that the IEWB advanced at a 0.78 per cent average annual growth rate over the period, below the 1.32 per cent growth for GDP per capita. Both the consumption and wealth domains experienced solid advances over the period, but these developments were offset by declines in the equality and economic security domains. The recent recession caused a decline in the IEWB for Canada, driven by declines in wealth and economic security.

Beyond GDP: Measuring Economic Well-being in Canada and the Provinces, 1981-2010

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Beyond GDP: Measuring Economic Well-being in Canada and the Provinces, 1981-2010

Executive Summary

In 1998, the Centre for the Study of Living Standards (CSLS) released the first estimates of the Index of Economic Well-being for Canada (Osberg and Sharpe, 1998). The Index of Economic Well-being (IEWB) is a composite index based on a conceptual framework for measuring economic well-being developed by Osberg (1985). Over the past decade, the CSLS has extended the geographical coverage of the Index to the Canadian provinces and to major OECD countries and has made a number of changes to the methodology used to construct the Index.

The objective of this report is to present updated estimates of the IEWB for Canada and the provinces over the 1981-2010 period. The report also outlines trends in the four domains of economic well-being that make up the Index – consumption, wealth, economic equality, and economic security. Furthermore, the report offers an analysis of the sensitivity of our results to the subjective choice of weights assigned to those four domains and a description of the performance of the IEWB compared to GDP per capita through the most recent recession.

The Index of Economic Well-being: Motivation and Conceptual Framework

The conceptual framework underlying the Index of Economic Well-being is based on two main ideas. First, economic well-being has multiple dimensions and an index should reflect that fact by aggregating measures of the various domains of economic well-being. Second, an index of economic well-being should reflect the fact that individuals differ (and have a moral right to differ) in the relative weights they assign to the different domains of economic welfare. In order to be useful to all individuals irrespective of those value differences, an index of well-being should make value judgments as explicit and transparent as possible.

The most frequently cited indicator of economic well-being is per-capita GDP. GDP measurement is essential for many important public policy purposes such as macroeconomic demand management and public finance. However, GDP accounting omits consideration of many issues – leisure time, longevity of life, asset stock levels, income inequality, and so on – that are important to individuals' economic welfare. Economic well-being is multidimensional; per-capita GDP reflects only one aspect of it, namely a society's output per person.

In accordance with the conceptual framework developed by Osberg (1985), the IEWB is a composite index comprised of four domains of economic welfare:

- **Per-capita consumption**
- **Per-capita wealth**
- **Economic equality**
- **Economic security.**

These four domains reflect economic well-being in both the *present* and the *future*, and account for both *average* access to economic resources and the *distribution* of that access among members of society. In basing the IEWB on data that reflect each of these domains, we are constructing an index that captures the multiplicity of dimensions of economic well-being.

Of course there are many non-economic aspects of human welfare. In focusing on *economic* well-being, we do not mean to downgrade the importance of non-economic factors. Instead, we are motivated by the idea that a better measure of "access to resources needed for a decent standard of living" is needed if economic and social trends are to be combined into an index with larger ambitions.

Indices of economic and social well-being are constructed because societies have to make public policy choices and the members of a society are, from time to time, faced with questions of the form: Would public policy X make 'society' better off? Since some policies may favour one dimension of well-being over another, to answer this class of question citizens need a way of 'adding it all up' – a way of coming to a summative judgment about impacts across the different, conceptually dissimilar domains of economic welfare. One of the aims of index construction is therefore to facilitate public policy discussion by providing a transparent means of aggregating across different dimensions of well-being.

'Adding up' across the domains of well-being necessarily requires an explicit or implicit value judgment about the relative importance of the domains. Since individuals have morally legitimate differences in their values, there can be no single, objectively correct way of aggregating across the domains of well-being. We argue that most indices of economic well-being (such as per-capita GDP) make important value judgments, but they do so implicitly rather than explicitly.

The IEWB addresses this issue by making all value judgments as explicit and transparent as possible. Our hypothesis is that indices of social well-being can best help individuals to come to reasonable answers about social choices if information is presented in a way that highlights the objective trends in major domains of well-being, and thereby helps individuals to come to summative judgments, while also respecting differences in values. In constructing the IEWB, individuals can select weights for the four domains in accordance with their own values. The IEWB is therefore capable of facilitating summative judgments and of clarifying why such judgments may sometimes diverge. If disagreement about policy decisions occurs, it is useful to know whether such disagreement comes from differing empirical assessment of objective data or differing values about their relative importance.

Thus, the IEWB has two major aims: to aggregate across different dimensions of economic well-being, and to allow for such aggregation even in the presence of morally legitimate value differences.

Trends in the Index of Economic Well-being, 1981-2010

This section reports our main empirical results. For Canada, key results are the following:

- The overall Index of Economic Well-being rose 0.114 points from 0.448 in 1981 to 0.562 in 2010 in Canada. This amounts to a 25.4 per cent total increase over the period, or a compound growth rate of 0.78 per cent per year.

- The growth rate of the IEWB was lower than that of GDP per capita, the most widely used metric of living standards. Indeed, real GDP per capita in Canada over the 1981-2010 period advanced 46.3 per cent (1.32 per cent per year), 20.9 percentage points greater than the per cent growth of the Index of Economic Well-being.

- The IEWB grew at 1.48 per cent per year over 1981-1989, but only increased by 0.11 per cent per year over 1989-2000. The 1980s was thus a much better decade for progress in economic well-being than the 1990s. Between 2000 and 2008, growth in the Index averaged 1.52 per cent per year, even better than in the 1980s.

- Between 1981 and 2010, the index of the per-capita consumption domain increased 0.571 points (or 215.5 per cent) from 0.265 to 0.836. Of the four domains, consumption had by far the largest increase over the period.

- The index of the per-capita wealth domain also increased, by 0.183 points (or 72.5 per cent) from 0.253 to 0.436.

- The index of the economic equality domain fell by 0.152 points (or 23.6 per cent) from 0.642 to 0.490.

- The index of the economic security domain declined by 0.147 points (or 23.3 per cent) from 0.632 to 0.485. This decline in economic security was driven largely by a decrease in security from the financial risk of illness, as measured by out-of-pocket healthcare expenditures. In Canada, the proportion of personal disposable income being spent on healthcare increased from 2.65 per cent in 1981 to 5.59 per cent in 2010.

- Overall, the increase in economic well-being in Canada over the 1981-2010 period has been driven by the dramatic increase in per-capita consumption and wealth, and hampered by the increases in economic inequality and insecurity.

In addition, we report results for the provinces. There is significant cross-province variation in the scores for the overall IEWB and the four domain indices. Key findings are:

- Alberta had the highest value of the overall IEWB in 2010 at 0.733 points, followed by Newfoundland at 0.639 points and Saskatchewan at 0.618 points.

- Nova Scotia and New Brunswick had the lowest overall IEWB values at 0.499 and 0.502 points, respectively.

- These results – Alberta ranking first in economic well-being and Nova Scotia ranking near the bottom – are robust to the use of different weights for the four domains. Alberta has very high scores in the consumption, wealth, and economic security domains, while Nova Scotia is below the Canadian average in all domains except consumption.

- Newfoundland experienced by far the strongest growth in the IEWB over the 1981-2010 period; its IEWB score increased by 0.360 points (or 129.3 per cent), from 0.279 to 0.639. British Columbia had the slowest growth; its score increased by 0.057 points, or 11.7 per cent. All provinces experienced positive IEWB growth over the period.

- Between 1981 and 2010, the indices of the consumption and wealth domains increased in all provinces. Newfoundland had the most significant growth in both domains. There, the index of the consumption domain increased by an astounding 0.705 points (or 845.7 per cent) from 0.083 to 0.788, while the index of the wealth domain increased by 0.628 points (or 360.7 per cent) from 0.174 to 0.803.

- The index of the economic equality domain decreased in five provinces, which indicates growing poverty and economic inequality in these provinces. British Columbia had the largest decrease in its index of equality (0.327 points, or 49.5 per cent), and its 2010 score of 0.334 in the economic equality domain was by far the lowest among the provinces.

- The index of the economic security domain fell in eight provinces, most significantly in Nova Scotia where it declined by 37.6 per cent. Canadians in most provinces became less economically secure. Newfoundland and Prince Edward Island were the only two provinces to show growth in the security domain since 1981.

- As in the case of Canada as a whole, the decline in economic security in many provinces was driven by decreasing security from the financial risk of illness. Almost all the provinces experienced positive growth in private health care spending as a share of disposable income between 1981 and 2010; the only exception was Newfoundland, and it is no coincidence that overall economic security increased over the period in that province.

Sensitivity of Results to Value Judgments

The overall Index is the weighted sum of the four domains, and individuals may have different opinions about the relative weighting of those domains. An important objective of the Index of Economic Well-being is to make explicit the value judgments that underlie composite indicators of well-being by making the choice of weights as transparent as possible. By testing the sensitivity of our results against changes in the weights assigned to the four domains, we can see whether or not value judgments make a significant difference in the measurement of trends in economic welfare.

Sensitivity analysis shows that our key baseline results are fairly robust to the use of different weights for the four domains. Under all four weighting alternatives we examine, economic well-being improved in Canada and in all provinces over the 1981-2010 period, with the exception of Ontario and British Columbia under Alternative 3. It improved most quickly in Newfoundland and Prince Edward Island. Alberta had the highest level of economic well-being in 2010, while Nova Scotia and New Brunswick ranked in the bottom three among the provinces under all alternative weighting schemes.

Results of the IEWB Under the Most Recent Recession

The recent recession caused a decline of the IEWB for Canada from 0.575 in 2008 to 0.554 in 2009. This decline was driven by falls in the wealth and economic security domains and was accompanied by only a minor decline in economic equality and continued increases in consumption. The recovery of the IEWB has been slow but exceeds the pace of the recovery of real GDP. In 2010, the IEWB for Canada was estimated 0.562, only 97.7 per cent of its value in 2008. By contrast, real GDP had only recovered to 96.5 per cent of its value in 2008.

The recession also caused a decline in the IEWB for six of the ten provinces. Newfoundland, Prince Edward Island, New Brunswick, and Quebec managed to avoid any decline in the IEWB. These strong performances are closely related to strong performances in the equality domain. Weak performances, such as the 9.1 per cent decline in the IEWB in Alberta, are based on collapses in the equality domain. The estimates for the IEWB have recovered faster than real GDP in every province except Alberta and Manitoba.

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Beyond GDP: Measuring Economic Well-being in Canada and the Provinces, 1981-2010[1]

In 1998, the Centre for the Study of Living Standards (CSLS) released the first empirical estimates for Canada of the Index of Economic Well-being (Osberg and Sharpe, 1998), a composite index based on a conceptual framework for measuring economic well-being developed by Osberg (1985). In the past decade, the CSLS has extended the geographical coverage of the Index to the Canadian provinces and to major OECD countries and has made a number of changes to the methodology used to construct the Index. The dual objectives of this report are to review these methodological changes and to present updated estimates of the Index for Canada and the provinces for the 1981-2008 period.

The report is divided into seven main parts. The first part provides a discussion of the motivation for the development of the Index of Economic Well-being (IEWB) and the potential contributions of the Index to the debate on the measurement of economic well-being. It also outlines the basic framework of the measure.[2] The second part, by far the longest, provides a detailed discussion of trends in the Index of Economic Well-being, and in the four domains and sub-components of the domains, in Canada and the provinces over the last quarter century. The third part tests the sensitivity of our results to alternative assumptions regarding the relative weights assigned to the four domains of the Index. The fourth part details the performance of the IEWB during the recent recession. The fifth part concludes.[3]

[1] This report is an update of the previous report on the IEWB released by Osberg and Sharpe (2009a). Some sections are taken from or based heavily upon this previous report. The authors would like to thank the following people for assistance in updating the extensive database upon which the estimates in this paper are made: Patrick Alexander, Jean-Francois Arsenault, Daniel Ershov, and Simon Lapointe, and Sharon Qiao. The authors would also like to thank Alexander Murray for excellent editing of the report, and Alberta Finance and Enterprise of the Government of Alberta for financial support for the updating of the IEWB database.

[2] For a discussion of methodological issues in the IEWB and lessons learned in the development of the IEWB, see Osberg and Sharpe (2009a, 2009b).

[3] The tables referred to throughout this report are located at the end of this document. We also make frequent reference to appendix tables containing the underlying data; these are available at the CSLS web site at http://www.csls.ca/iewb2009/IEWB_Canada_AppendixTables.pdf. The database is also available in Microsoft Excel format at http://www.csls.ca/iewb2009/IEWB_Canada.xls.

I. The Index of Economic Well-being: Motivation and Framework[4]

A frequent refrain in the social indicators literature is the (true) statement that there is more to "well-being" than economics, but it is also widely recognized that a key component of overall well-being is economic well-being or "access to economic resources." Although there are good grounds for thinking that national income accounting measures may not necessarily be a good guide to popular perceptions of trends in economic well-being, GDP per capita is probably the single most often mentioned criterion of economic progress.

In focusing on the economic aspects of well-being in this report we do not intend to downgrade the importance of non-economic issues. Instead, we are motivated by the idea that a better measure of "access to resources needed for a decent standard of living" is needed if economic and social trends are to be combined into an index with larger ambitions.

With respect to the economic component of societal well-being, our particular emphasis is on sustainability and on the sensitivity of measures of aggregate "command over resources" to the omission or inclusion of measures of income distribution and economic security.

Although we argue that the IEWB is superior to GDP as a measure of command over resources, we do not intend to deny the importance of obtaining an accurate count of the total money value of goods and services produced for sale in the market in a given country in a given year (i.e. GDP). Clearly, GDP measurement is essential for many important public policy purposes (e.g. macroeconomic demand management, public finance). However, GDP accounting does omit consideration of many issues (for example, leisure time, longevity of life, asset stock levels) which are important to individuals' command over resources. Although the compilers of the national accounts may protest that their attempt to measure the aggregate money value of marketed economic output was never intended as a full measure of economic well-being, it has often been used as such. The question the critics of GDP have to answer is whether alternative measures of command over resources are possible, plausible, and make some difference.

In developing an Index of Economic Well-Being for Canada based on four dimensions of economic well-being – consumption, accumulation, economic equality, and economic security – this report attempts to construct better measures of effective consumption and societal accumulation. However, an important point of difference with other indices is that we argue that "society's well-being" is not a single, objective number (like the average altitude of a country).

[4] This section is taken from Osberg and Sharpe (2009a), which draws on Osberg and Sharpe (2005).

It is more accurate, in our view, to think of each individual in society as making a subjective evaluation of objective data in coming to a personal conclusion about society's well-being. Well-being has multiple dimensions and individuals differ (and have the moral right to differ) in their subjective valuation of the relative importance of each dimension of well-being. But because all adults are occasionally called upon, in a democracy, to exercise choices (e.g. in voting) on issues that affect the collectivity (and some individuals, such as civil servants, make such decisions on a daily basis), citizens have reason to ask questions of the form: "Would public policy X make 'society' better off?" Presumably, self-interest plays some role in all our choices, but unless self-interest is the sole criterion, an index of society's well-being is useful in helping individuals answer such questions.

Although conceptually there may be no way to measure some of the different dimensions of well-being in directly comparable units, as a practical matter citizens are frequently called upon to choose between policies that favour one or the other. Hence, individuals often have to come to a summative decision – i.e. have a way of "adding it all

Exhibit 1: Conceptual Framework for the Index of Economic Well-being

Concept	Present	Future
"Typical Citizen" or "Representative Agent"	Average flow of current income	Aggregate accumulation of productive stocks
Heterogeneity of Experiences of All Citizens	Distribution of potential consumption -- income inequality and poverty	Insecurity of future incomes

up" – across domains that are conceptually dissimilar. From this perspective, the purpose of index construction should be to assist individuals – e.g. as voters in elections and as bureaucrats in policy making – in thinking systematically about public policy, without necessarily presuming that all individuals have the same values.

Our hypothesis is that indices of social well-being can best help individuals to come to reasonable answers about social choices if information is presented in a way that highlights the objective trends in major dimensions of well-being and thereby helps individuals to come to summative judgments – but also respects differences in values. Although it may not be possible to define an *objective* index of societal well-being, individuals still have the problem (indeed, the moral responsibility) of coming to a *subjective* evaluation of social states, and they need organized, objective data if they are to do it in a reasonable way.

The logic of our identification of four components of well-being is that it recognizes both trends in average outcomes and in the diversity of outcomes, both now and in the future, as Exhibit 1 illustrates.

When an average flow like GDP per capita (or an alternative, such as the average personal income) is used as a summative index of well-being, the analyst is implicitly stopping in the first quadrant of Exhibit 1. He or she is assuming that the experience of a representative agent can summarize the well-being of society and that the measured income flow optimally weights consumption and savings, so that one need not explicitly distinguish between present consumption flows and the accumulation of asset stocks which will enable future consumption flows.

However, if society is composed of diverse individuals living in an uncertain world who typically "live in the present, anticipating the future," each individual's estimate of societal economic well-being will depend on the proportion of national income saved for the future. GDP is a measure of the aggregate market income of a society. It does not reveal the savings rate, and there is little reason to believe that the national savings rate is automatically optimal. Indeed, if citizens have differing rates of time preference, any given savings rate will only be "optimal" from some persons' points of view. Hence, a better estimate of the well-being of society should allow analysts to distinguish between current consumption and the accumulation of productive assets (which determines the sustainability of current levels of consumption), and thereby enable citizens to apply their differing values.

As well, individuals are justifiably concerned about the degree to which they and others will share in prosperity – there is a long tradition in economics that "social welfare" depends on both average incomes and the degree of inequality and poverty in the distribution of incomes. If the future is uncertain, and complete insurance is unobtainable (either privately or through the welfare state), individuals will also care about the degree to which the economic future is secure for themselves and others.

These four domains therefore have a logical rationale, and four is a manageable number of headings. If the objective of index construction is to assist public policy discussion, one must recognize that when too many categories have to be considered simultaneously, discussion can easily be overwhelmed by complexity. We therefore do not adopt the strategy of simply presenting a large battery of indicators. However, because reasonable people may disagree in the relative weight they would assign to each dimension (e.g. some will argue that inequality in income distribution is highly important while others will argue the opposite), we argue that it is preferable to be explicit and open about the relative weights assigned to components of well-being, rather than leaving them implicit and hidden. (An additional reason to distinguish the underlying components of economic well-being is that for policy purposes it is not particularly useful to know only that well-being has gone "up" or "down", without also knowing which aspect of well-being has improved or deteriorated.) We specify *explicit* weights to the components of well being and test the sensitivity of aggregate trends to changes in those weights, in order to enable others to assess whether, based on their personal values about what is important in economic well-being, they would agree with an overall assessment of trends in the economy.

This report's basic hypothesis – that a society's economic well-being depends

on total consumption and accumulation, and on the individual inequality and insecurity that surround the distribution of macroeconomic aggregates – is consistent with a variety of theoretical perspectives. We do not present here a specific, formal model**.** In a series of papers (Osberg and Sharpe, 1998, 2002a, and 2005) we have described the details of the calculation of the four components or dimensions of economic well-being:

- [1] effective per capita consumption flows – which include consumption of marketed goods and services, government services, and adjustment of effective per-capita consumption flows for household production, changing household economies of scale, leisure, regrettable expenditures, and life expectancy;

- [2] net societal accumulation of stocks of productive resources – which consists of net accumulation of physical capital, the value of natural resources stocks, net international investment position, accumulation of human capital, and R&D stocks, as well as an adjustment for costs associated with environmental degradation;

- [3] economic equality – the intensity of poverty (incidence and depth) and the inequality of income;

- [4] economic security from job loss and unemployment, illness, family breakup, and poverty in old age.

Each domain of economic well-being is itself an aggregation of many underlying variables, on which the existing data can be of uncertain quality. By contrast, the System of National Accounts has had many years of development effort by international agencies (particularly the UN and the IMF), and has produced an accounting system for GDP that is rigorously standardized across countries. However, using GDP per capita as a measure of "command over resources" would implicitly:

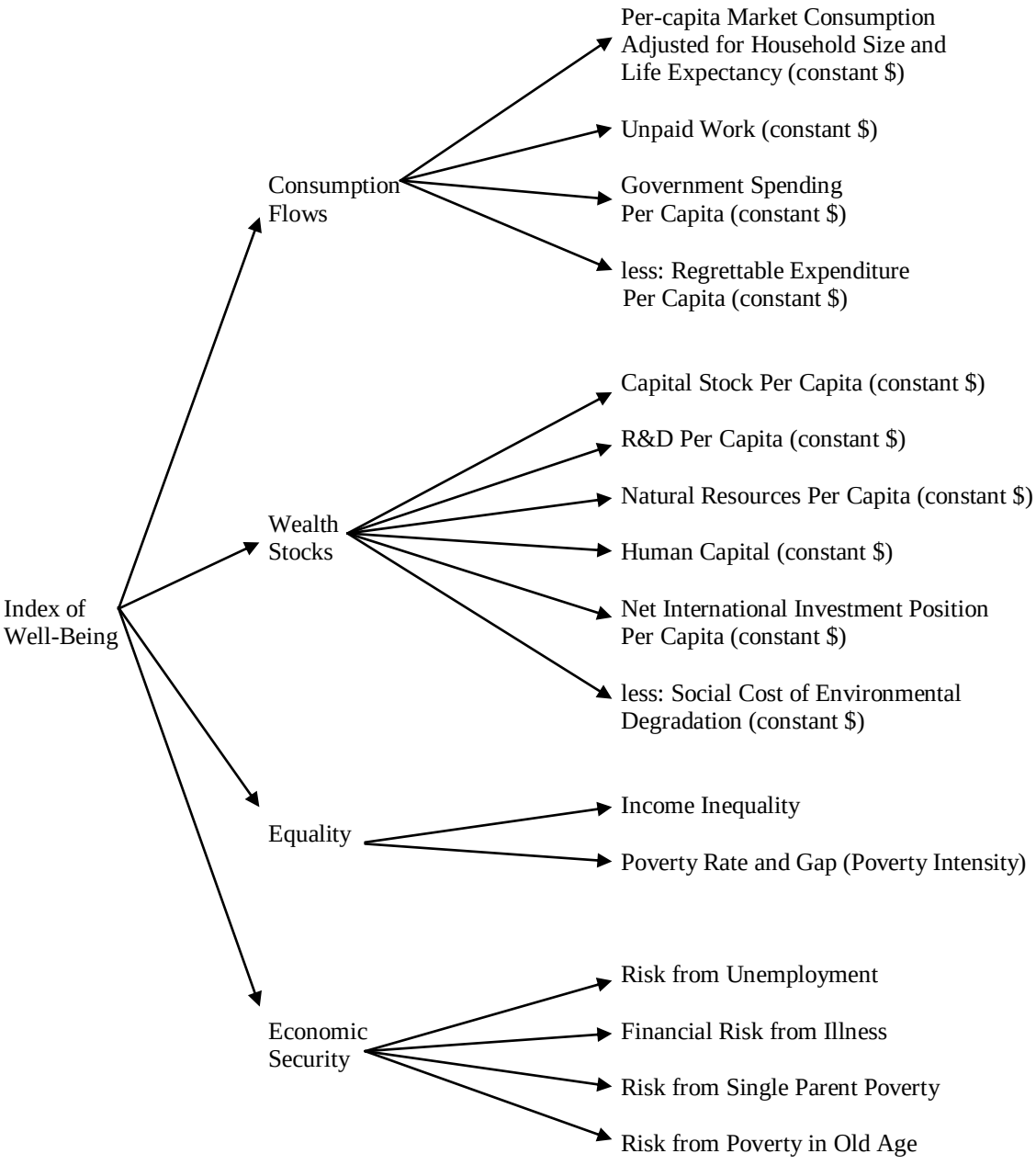
(1) assume that the aggregate share of income devoted to accumulation (including the public capital stock, human capital, research and development and the value of unpriced environmental assets) is automatically optimal, and

(2) set the weight of income distribution and economic insecurity to zero, by ignoring entirely their influence.

Neither assumption seems justifiable, and neither is innocuous.

Due to data limitations, estimates of the Index of Economic Well-being computed for different geographical regions may differ in the number of variables that can be included in the calculations. Exhibit 2 illustrates the components that are used in our estimates of the Index of Economic Well-being for Canada and the provinces, based on the four domains outlined above.

Exhibit 2: The CSLS Index of Economic Well-being: Weighting Tree for Canada and the Provinces



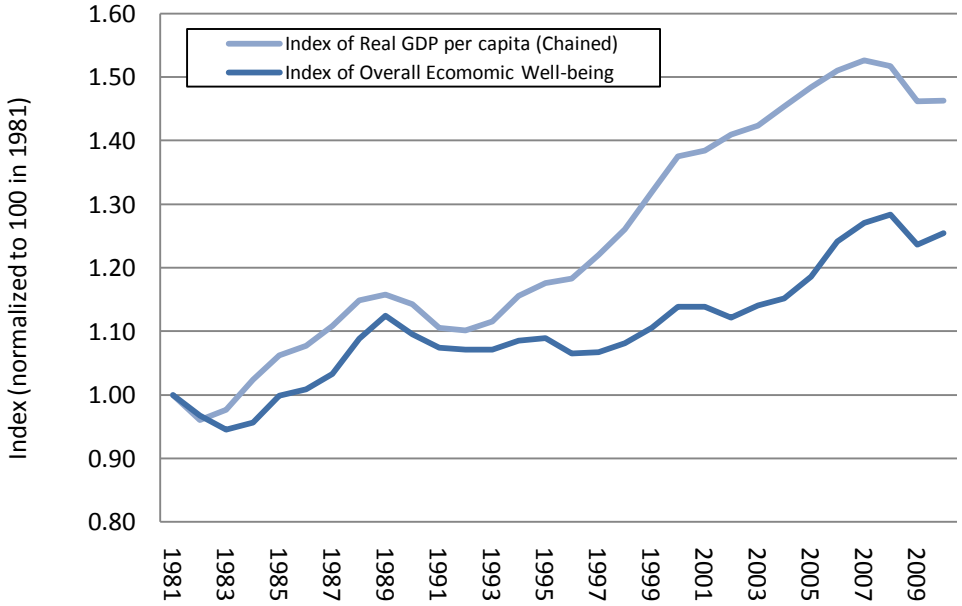
II. Trends in the Index of Economic Well-being for Canada and the Provinces, 1981-2010

A. Overall Trends in the Index of Economic Well-being

i. Trends in Canada

The scaled value of the overall Index of Economic Well-being rose 0.114 points from 0.448 in 1981 to 0.562 in 2010 in Canada (Table 1).[5] This amounts to a 25.4 per cent total increase over the period, or an average annual rate of change of 0.78 per cent. This rate of growth is less than that of GDP per capita, the most widely used metric of living standards and sometimes seen as a proxy for economic well-being. Indeed, real GDP[6] per capita in Canada over the 1981-2010 period advanced 46.3 per cent (1.32 per cent per year), 0.54 percentage points per year faster than the rate of increase of the Index of Economic Well-being (Tables 1-2, and Chart 1).

Chart 1: Trends in the Overall Index of Economic Well-being and GDP per Capita, Canada, 1981-2010, Indexed, 1981=100



Source: Tables 1 and 2

The rate of advance of the Index of Economic Well-being for Canada was not steady over the 1981-2010 period. The Index fell in the early years of the 1980s, advanced strongly during the 1984-1989 period, then fell from 1990 to 1992, in 1996, from 2001-2002, and again in 2009. It picked up strongly in the 1997-2000period. Progress stalled in 2001, but saw strong gains between 2003 and 2008 before declining during the recession in 2009

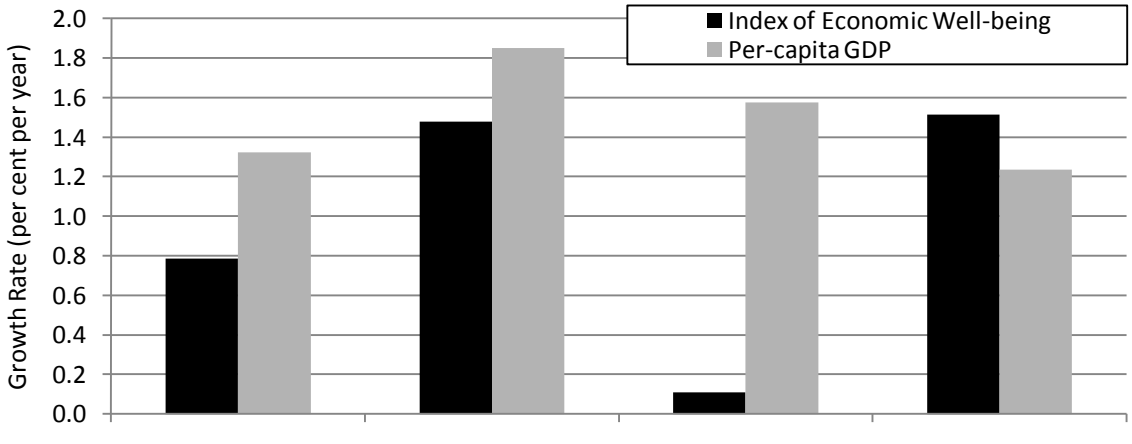
[5] All tables are located at the end of this document. Appendix tables can be accessed at http://www.csls.ca/iewb2009/IEWB_Canada_AppendixTables.pdf.
[6] 2002 Chained Dollars

The years 1981, 1989, 2000, and 2008 were well-defined business cycle peaks in Canada. From a peak to peak perspective, which controls for cyclical fluctuations, the Index of Economic Well-being grew at 1.48 per cent per year over 1981-1989, but grew by only 0.11 per cent per year over 1989-2000. The 1980s was thus a much better decade for progress in economic well-being than the 1990s. Between 2000 and 2008, growth in the Index averaged 1.52 per cent per year, even better than in the 1980s.

The pattern of advance and decline in the Index of Economic Well-being for Canada corresponds roughly to that of GDP per capita (Chart 1), with economic expansions characterized by growth in both the Index of Economic Well-being and in GDP per capita, and with recessions and periods of economic stagnation characterized by declines in both variables. This relationship of course reflects the fact that some components of the Index of Economic Well-being, such as consumption, are included in GDP and that other components are correlated with or driven by GDP trends.

However, there are periods (such as the early 1990s) during which the Index and per-capita GDP diverge. The rate of advance of GDP per capita was similar in the first and third sub-periods of the overall 1981-2009 period: 1.85 per cent per year in 1981-1989, 1.58 per cent in 1989-2000 (although growth in the first half of the 1990s was much weaker than the second half), and 1.23 per cent over 2000-2008 (Table 2 and Chart 2). In the first of the three cyclically-neutral sub-periods, GDP per capita advanced at an

Chart 2: Growth of the Index of Economic Well-being and Per-capita GDP, Canada, 1981-2010



Source: Tables 1 and 2

annual rate within 0.5 percentage points of the Index of Well-being. But in the 1990s (1989-2000), when the Index of Economic Well-being was growing by only 0.11 per cent per year, GDP per capita grew only slightly more slowly than it had in the 1980s. Between 2000 and 2008, on the other hand, the Index of Economic Well-being has progressed 0.28 percentage points faster per year than GDP per capita. Thus, rapid GDP

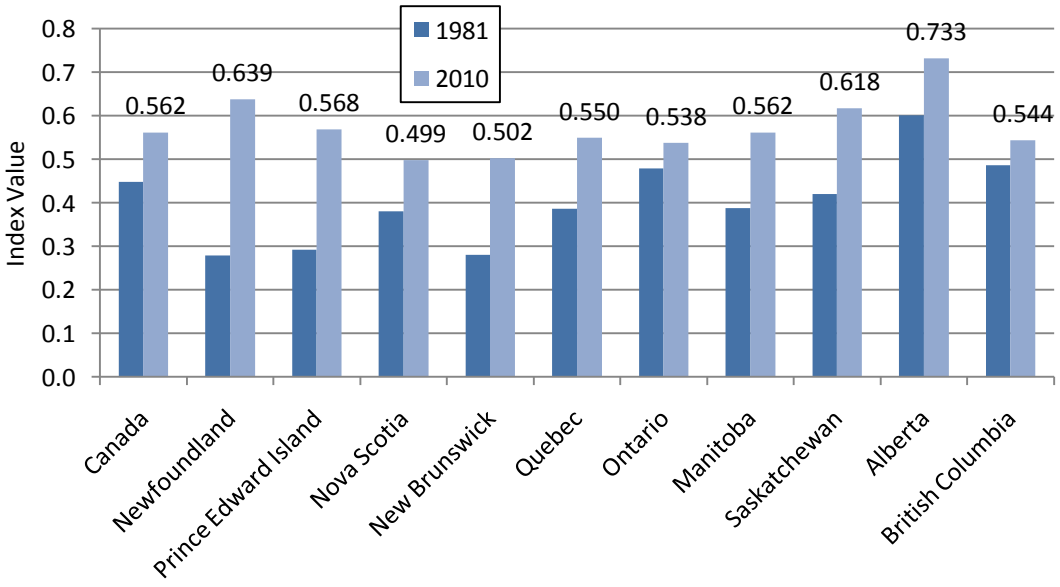
per capita growth does not necessarily translate into rapid growth in economic well-being, and vice versa. The reasons for this will be explored later in the report.

ii. Trends in the provinces

Among the provinces, Alberta had the highest value of the overall index in 2010 at 0.733 points, followed by Newfoundland at 0.639 points and Saskatchewan at 0.618 points (Table 1 and Chart 3). Nova Scotia and New Brunswick had the lowest values at 0.499 and 0.502 points, respectively. In terms of progress, all the provinces experienced considerable growth in the overall Index of Economic Well-being over the 1981-2010 period. Newfoundland showed by far the strongest gain with 129.3 per cent growth, while the slowest growth came from British Columbia with 11.7 per cent.

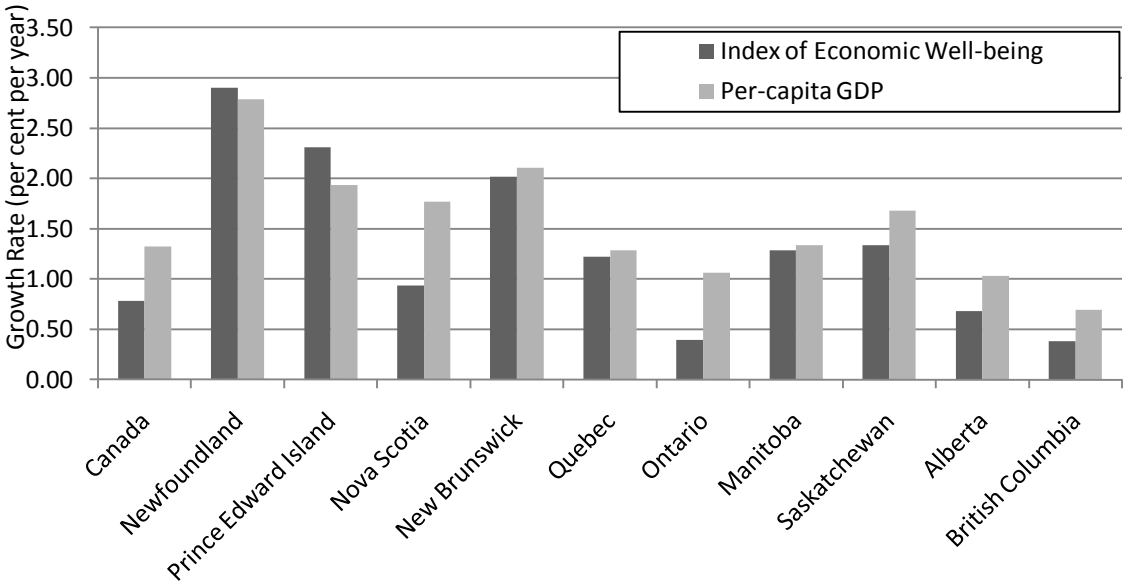
Alberta also had the highest level of real GDP per capita in 2010, followed by Saskatchewan and Ontario, while the Maritime Provinces (excluding Newfoundland) had the lowest levels. In contrast to the national trend, two provinces experienced better growth in the Index of Economic Well-being than in real GDP per capita over the 1981-2010 period: Newfoundland and Prince Edward Island (Chart 4). Exhibit 3 shows the rankings of Canada and the provinces according to the levels and growth rates of the Index of Economic Well-being and per-capita GDP. It is clear that the dimensions of economic welfare to which GDP implicitly assigns zero weight have an important impact on social rankings. Both in terms of 2010 levels and in terms of growth rates over the 1981-2010 period, the rankings given by the IEWB are somewhat different from those based on per-capita GDP.

Chart 3: Overall Index of Economic Well-being, Canada and the Provinces, 1981 and 2010



Source: Table 1

Chart 4: Growth of the Index of Economic Well-being and Per-capita GDP, Canada and the Provinces, 1981-2010



Source: Tables 1 and 2.

Exhibit 3: Ranking by Index of Economic Well-being and Per-capita GDP, Canada and the Provinces

	Level, 2010		**Growth Rate, 1981-2010**	
Rank	**Index of Economic Well-being**	**GDP Per Capita**	**Index of Economic Well-being**	**GDP Per Capita**
1	Alberta	Alberta	Newfoundland	Newfoundland
2	Newfoundland	Saskatchewan	Prince Edward Island	New Brunswick
3	Saskatchewan	Ontario	New Brunswick	Prince Edward Island
4	Prince Edward Island	Canada	Saskatchewan	Nova Scotia
5	Manitoba	British Columbia	Manitoba	Saskatchewan
6	Canada	Newfoundland	Quebec	Manitoba
7	Quebec	Manitoba	Nova Scotia	Canada
8	British Columbia	Quebec	Canada	Quebec
9	Ontario	New Brunswick	Alberta	Ontario
10	New Brunswick	Nova Scotia	Ontario	Alberta
11	Nova Scotia	Prince Edward Island	British Columbia	British Columbia

B. Overall Trends in the Four Domains of the Index of Economic Well-being

The Index of Economic Well-being is comprised of four domains, or dimensions, of economic well-being: consumption flows, stocks of wealth, economic equality, and economic security. This section examines overall trends in these four domains in Canada over the 1981-2010 period. The next four sections look at each domain in depth, analyzing developments in the components and subcomponents of the domains at the national and provincial levels.

Chart 5 and Tables 3 to 6 present estimates of the four domains of the Index of Economic Well-being over the 1981-2010 period. One observes significant divergence in trends in the domains. The consumption and wealth domains enjoyed very large increases while the economic equality and security domains experienced more cyclical trends and declined over the period.

i. Measurement of trends in the scaled domain indices

There are two ways to measure progress in the domains: the absolute change in the scale value of the domain, and the percentage change in the index of the scaled values. This latter method is influenced by the absolute level of the scaled value in the base year. For example, assume Domain A has scaled values of 0.2 and 0.6 in the base and end years while Domain B has values of 0.5 and 0.9. Progress measured in percentage points is the same for the two domains – 0.4 percentage points. But the index of the scaled values shows that Domain A increased 200 per cent while Domain B advanced only 80 per cent.

The scaled values are sensitive to the universe of values that are used for the scaling procedure. For Canada there are 30 data points for a time series for the 1981-2010 period, but for Canada and the provinces there are 330 data points (11*30). For Canada scaled separately values run from 0 to 1. Equally, for Canada and the provinces scaled together the values run from 0 to 1. But for any given variable, some provinces will be above the Canadian average and some will be below. This means that the range of values must be wider when the provinces are included, and the range of *scaled* values for Canada will be much smaller when the provincial values are included than when Canada is considered alone. This also means that the percentage rate of increase in the index of the scaled values will be considerably greater for Canada if scaled separately.

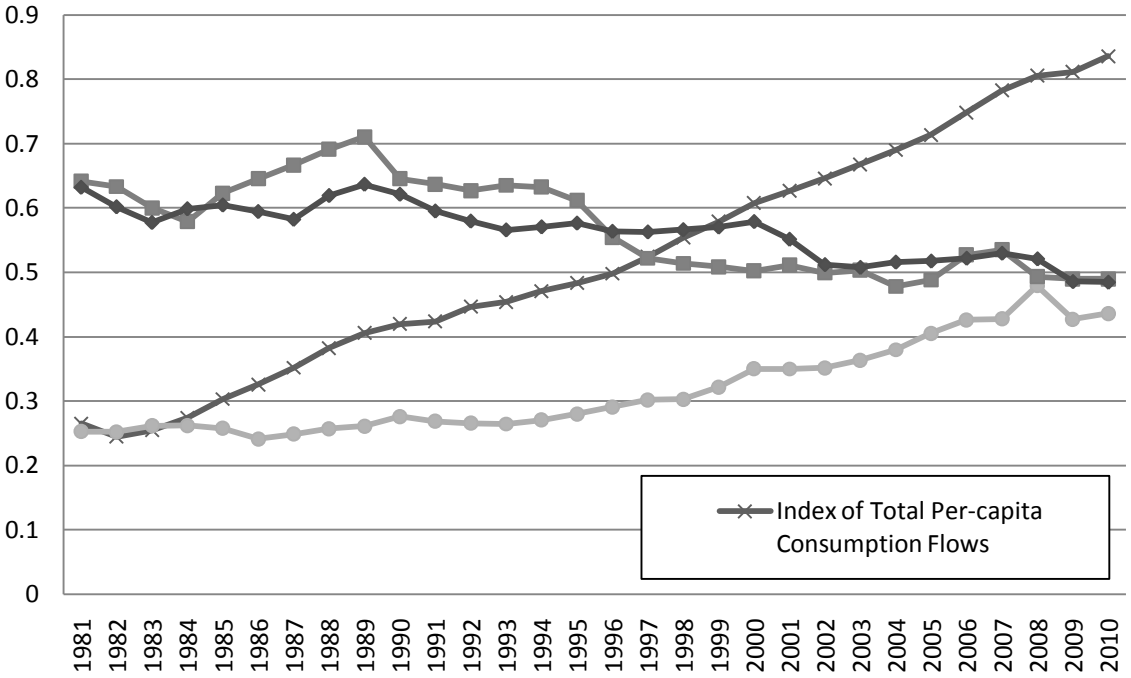
It should also be noted that for domains where components are aggregated in prices (consumption and wealth), index values will have different percentage rates of change depending on whether these rates are based on the scaled or unscaled values. For example, over the 1981-2010 period, total consumption flows in Canada increased 1.85 per cent per year (from $26,544 to $45,117) in real dollar terms, and 4.04 per cent per year (from 0.265 to 0.836) in scaled index terms.

ii. Trends in Canada

In Canada, the consumption domain's index score of 0.836 was the highest among the four domains in 2010. The equality domain had the next highest score, at 0.490, followed by the economic security domain at 0.485 and the wealth domain at 0.436 (Chart 5 and Chart 6).[7]

Chart 6 illustrates that the increase in the overall Index of Economic Well-being over the 1981-2010 period was driven entirely by increases in the index scores for the consumption and wealth domains, while declines in economic equality and security dampened growth in overall well-being. Over the period, the index of the consumption domain increased 0.571 points (or 4.04 per cent per year) from its 1981 value of 0.265, while the index of the wealth domain grew 0.183 points (or 1.90 per cent per year) from 0.253 in 1981 (Tables 3 and 4). In contrast, the index of the economic equality domain fell 0.152 points (or 0.93 per cent per year) from its 1981 value of 0.642, and the index of the economic security domain declined 0.147 points (or 0.91 per cent per year) from 0.632 in 1981 (Tables 5 and 6).

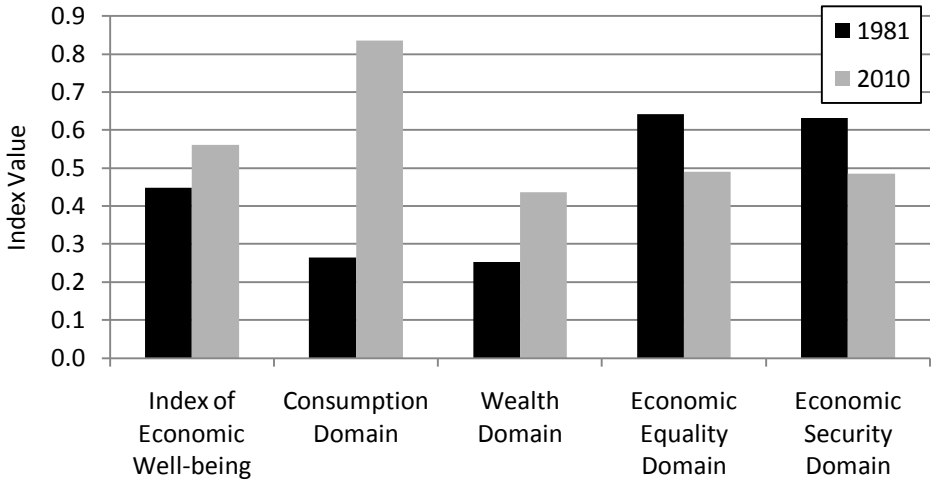
Chart 5: Trends in the Four Domains of the Index of Economic Well-being, Canada, 1981-2010



Source: Tables 3-6.

[7] Because of the linear scaling procedure, a scaled index of a variable for Canada is a function of the variation in that variable across provinces. As described in Section II above, the observed range of provincial values determines the 'feasible range' that we use in the linear scaling procedure. This explains why Canada's scaled value for the wealth domain is smaller than its scaled value for the consumption domain even though, in dollar terms, per-capita wealth is much greater than per-capita consumption. The wealth domain takes a much wider range of values across provinces, and the Canadian average value is further from the maximum provincial value in wealth than in consumption.

Chart 6: The Index of Economic Well-being and its Domains, Canada, 1981 and 2010



Source: Tables 1 and 3-6.

However, there were significant differences across the three cyclically-neutral sub-periods in terms of progress (or regress) in the four domains. The consumption domain experienced the most consistently strong growth, although the index grew much faster over the 1981-1989 period (5.47 per cent per year) than over the 1989-2000 period (3.74 per cent per year) or the 2000-2008 period (3.59 per cent per year) (Table 3). In contrast, the index of the wealth domain grew by only 0.40 per cent per year over 1981-1989, before accelerating to annual growth of 2.71 per cent over the 1989-2000 period and 4.00 per cent over 2000-2008 (Table 4).

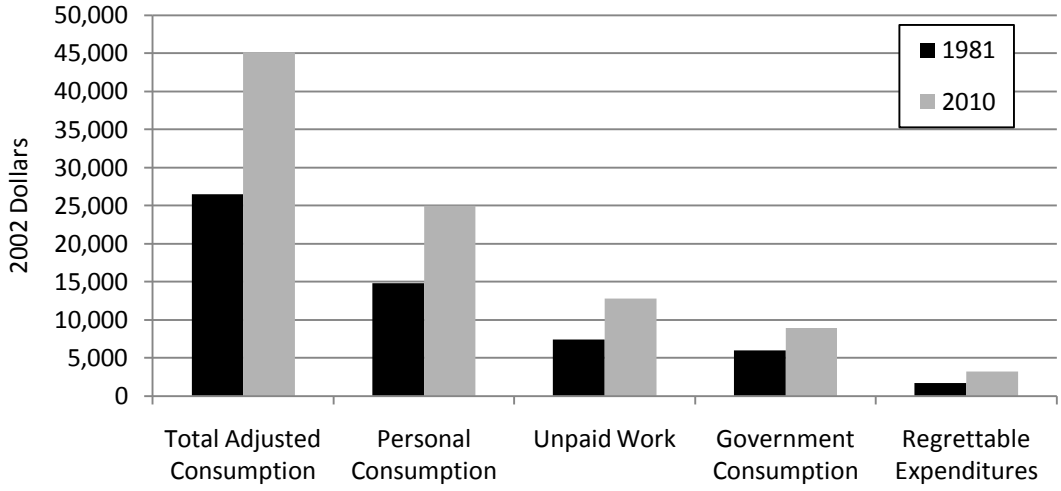
Canada's performance in economic equality was volatile. The domain's index increased by 1.29 per cent per year over 1981-1989, then plummeted by 3.11 per cent per year over the 1989-2000 period. In the most recent period, 2000-2008, the index of equality decreased by a negligible rate of change of 0.22 per cent per year over 2000-2008 (Table 5).

It was the economic security domain in which Canada's performance was the most consistently weak. After growing by a negligible 0.09 per cent per year over the 1981-1989 period, the index of the economic security domain declined 0.86 per cent per year over the 1989-2000 period and 1.31 per cent per year over the 2000-2008 period (Table 6).

C. Trends in the Components of the Consumption Flows Domain

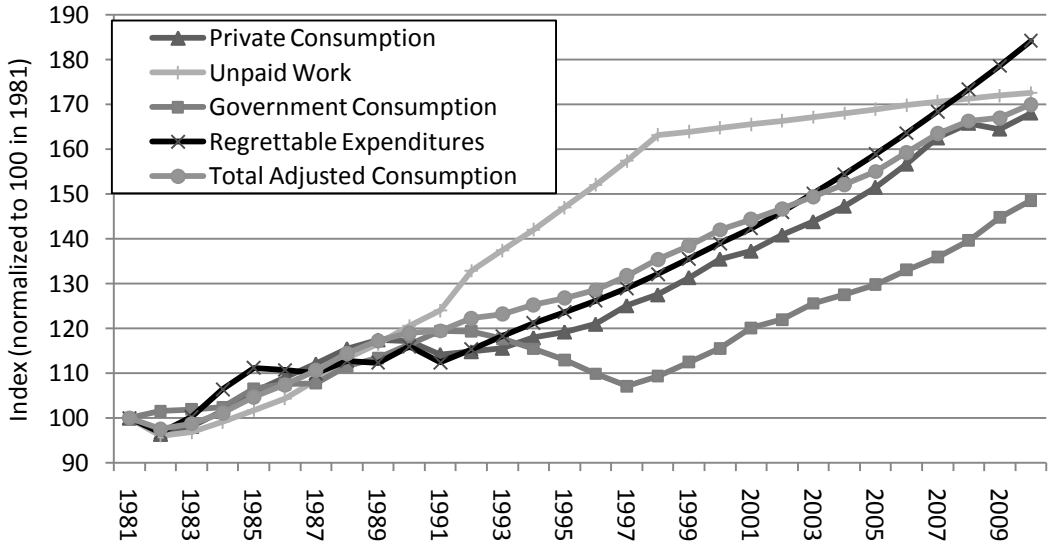
As noted earlier in the report, the consumption domain consists in three main components: private or personal consumption expenditures; government expenditures on goods and services consumed either directly or indirectly by households; and the value of

Chart 7: Components of the Consumption Domain, Canada, 2002 Dollars, 1981 and 2010



Source: Table 3 and Appendix Tables 1, 3, and 5-6.

Chart 8: Trends in Total Adjusted Consumption per Capita and its Components, Canada, 1981-2010, (1981=100)



Source: Table 3 and Appendix Table 1, 3, and 5-6.

unpaid work, including both unpaid household work and volunteer work outside the household.

Three adjustments are in turn made to these components.[8] First, since economies of scale exist in private household consumption, private consumer expenditure is adjusted for changes in family size. Second, regrettable expenditures – expenditures that do not contribute to economic well-being, defined here as commuting costs, costs of crime, costs of divorce, and household pollution abatement expenditures – are subtracted from overall consumption flows. Third, an adjustment for the positive impact of increased life expectancy on well-being is made by adjusting total consumption flows by the per cent increase in life expectancy.

Table 3 and Appendix Tables 1 to 6 show the estimates of the components of total consumption flows in Canada, expressed in per capita terms in 2002 constant dollars, as well as the adjustments for the 1981-2010 period.
Chart 7 illustrates the levels of the dollar-denominated consumption components for Canada in 1981 and 2010, while Chart 8 plots their trends over the 1981-2010 period.

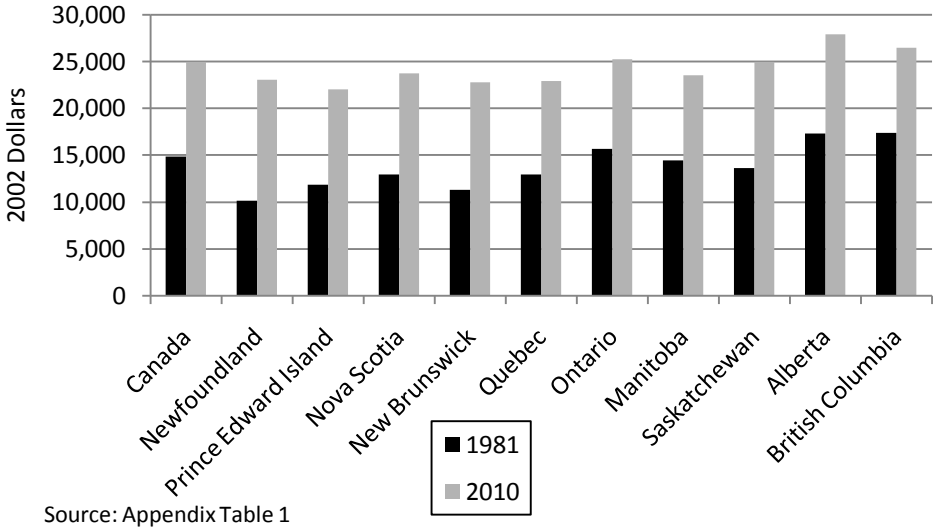
i. Private Consumption

a. Trends in Canada

In 2010, personal consumption per capita was $24,952 (2002 dollars), accounting for over one half of total consumption flows (Table 3a and
Chart 7). Personal consumption in 2010 was up 68.0 per cent from its 1981 level of $14,849, an average annual rate of increase of 1.81 per cent. Except for the recessions of the early 1980s, early 1990s, and 2009, private consumption progressed steadily throughout the period (Chart 8). However, growth was somewhat slower in the 1989-2000 period (1.30 per cent per year) than in the 1981-1989 period (2.03 per cent) and the 2000-2008 period (2.55 per cent).

[8] In the estimates of the Index of Economic Well-being for OECD countries a fourth adjustment is made to consumption flows to account for the large international differences in growth rates and levels of annual hours worked (Osberg and Sharpe, 2009). As both the trend in hours worked in Canada and level differences among provinces are not particularly large, this adjustment has not been introduced in this report, but may be in the future.

Chart 9: Private Consumption per Capita, Canada and the Provinces, 2002 Dollars, 1981 and 2010



Source: Appendix Table 1

b. Trends in the provinces

At $27,903 (in 2002 dollars), Alberta had the highest personal consumption per capita of all the provinces in 2010, followed by British Columbia at $26,485 and Ontario at $25,232 (Chart 9). Prince Edward Island had the lowest level of personal consumption per capita at $22,059. In terms of growth, all the provinces showed considerable progress. Newfoundland showed by far the strongest gains in personal consumption per capita since 1981 with a 126.4 per cent overall improvement (2.86 per cent annually) followed by New Brunswick with a gain of 101.4 per cent over the same period (2.44 per cent annually). British Columbia exhibited the least progress with a 52.5 per cent increase in per capita personal consumption between 1981 and 2010. Over the 1981-2010 period, most of the provinces showed a pattern similar to the national one; growth was consistently positive throughout the period, although it slowed somewhat in the 1990s. The exceptions are Saskatchewan and Alberta; in those provinces, personal consumption growth grew faster in the 1990s than the 1980s, and faster still between 2000 and 2008.

ii. Average Family Size

It is important to adjust the dollar value of per-capita consumption to reflect the fact that there are economies of scale in household consumption. When people live together in groups, they can achieve greater effective consumption than they could if they lived alone as individuals; for instance, they can cooperate in household production (e.g. one person can cook for everyone) and share fixed costs (e.g. they can share one refrigerator rather than each person having to buy one). To account for this issue, we use the Luxembourg Income Study equivalence scale, which is the square root of family size.[9]

[9] The definition of 'family' encompasses two groups: 'economic families,' which are groups of two or more persons related by blood, marriage, common-law, or adoption and living in the same dwelling; and 'unattached individuals,'

a. Trends in Canada

In 2010, the average family size in Canada was 2.35 persons (Appendix Table 2).[10] This was down 13.6 per cent (or 0.50 per cent per year) from its 1981 level of 2.72 persons, due to both a decline in the number of children per family and an increase in the proportion of unattached individuals within total households. Average family size declined during all three sub-periods of the 1981-2010 period; the decline was fastest during the 1981-1989 period (0.75 per cent per year).

b. Trends in the provinces

Among the provinces, Manitoba had the largest average family size in 2010, at 2.50 persons, followed by Ontario at 2.46. The smallest family size was in Quebec, at 2.17 persons. Over the 1981-2010 period, there was a shift in terms of where the largest average family sizes were observed. In 1981, family sizes in the Atlantic Provinces were all well above the national average; this was particularly true in Newfoundland, where the average family contained 3.55 persons. Over the period, each of the provinces from Quebec eastward experienced dramatic declines of at least 20.0 per cent in average family size, while the provinces from Ontario westward experienced declines between 7.9 and 10.3 per cent. The largest decline was in Newfoundland, where average family size fell 34.4 per cent from 3.55 to 2.33 over the period.

iii. Government Expenditures on Goods and Services

a. Trends in Canada

In 2010, government expenditures per capita on goods and services were $8,978 in 2002 dollars (Appendix Table 3). Government expenditures include spending by all levels of government on current goods and services and on fixed capital and inventories, minus capital consumption allowances. Government expenditures in 2010 were up 48.5 per cent from $6,046 in 1981, an average annual rate of increase of 1.37 per cent. Except for the years from 1992 to 1997 inclusive, government expenditure increased ever year, although the pace of increase varied (Chart 8). Growth in per-capita real government expenditures was extremely weak in the 1989-2000 period (0.17 per cent per year), but fairly strong in the 1981-1989 period (1.58 per cent per year) and robust since 2000 (2.54 per cent per year). In the peak-to-peak period of 2000-2008, the growth of government

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which are persons either living alone or sharing a dwelling with persons to whom they are unrelated by blood, marriage, common-law, or adoption. Note that multiple families may live within a single household. Strictly speaking, our adjustment should be made on the basis of households rather than families. Two unattached individuals who live as roommates enjoy many of the benefits of economies of scale in household consumption (e.g. they don't have to buy two refrigerators), but since they are recorded as two separate families, our income adjustment does not capture the benefits of their cooperation. This is a minor issue, however.

[10] Data on the total number of families in Canada and the provinces, which is used to compute average family size, is available only to 2007. The value for 2008 is extrapolated using the compound annual growth rate for the 2001-2007 period. Throughout this report, the unavailability of data sometimes necessitates the construction of such estimates. Such cases will be identified either in the text or in a footnote.

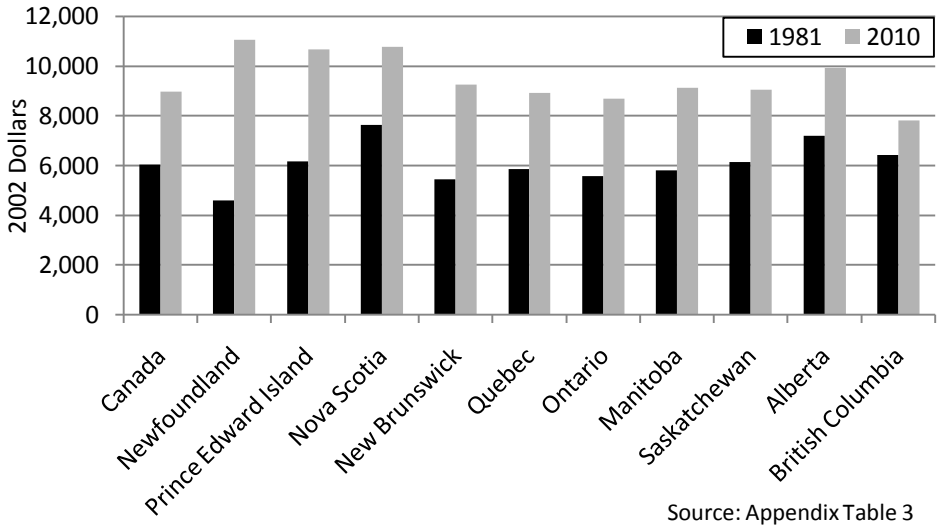
expenditures per capita was slightly slower, at 2.40 per cent per year. This indicates an increase in the rate of growth of government expenditures during the 2009 recession.

b. Trends in the provinces

At the provincial level, the Atlantic Provinces tended to have the largest levels of per-capita government expenditures in 2010, with Newfoundland having the largest at $11,070, followed by Nova Scotia at $10,773 and Prince Edward Island at $10,666 (Chart 10). British Columbia had the lowest per-capita level at $7,813.

The large 2010 levels in the Atlantic Provinces reflect the fact that those provinces had the largest growth in per-capita government spending over the 1981-2010 period. In particular, Newfoundland – which had the lowest per-capita government expenditures of any province in 1981, at $4,605 –saw a 140.4 per cent increase over the period, while Prince Edward Island and New Brunswick also saw large gains of 72.7 per cent and 70.2 per cent, respectively. Meanwhile, per-capita government spending growth in British Columbia over the same period was the lowest of all the provinces at 21.4 per cent. Similar to the national pattern, all provinces experience the lowest growth rates (in some cases, negative rates) during the 1989-2000 period.

Chart 10: Per-capita Government Expenditures on Goods and Services, Canada and the Provinces, 2002 Dollars, 1981 and 2010



Source: Appendix Table 3

iv. Unpaid Work

Statistics Canada (1995) classifies unpaid work into five major categories: domestic work (meal preparation, cleaning, clothing care, repairs and maintenance, and other domestic work); help and care (child care and adult care); management and shopping; transportation and travel; and other unpaid work. The first four categories are called household work. The last category is non-household work, or volunteer work. We draw estimates of hours of unpaid work performed by persons aged 15 and over for 1981,

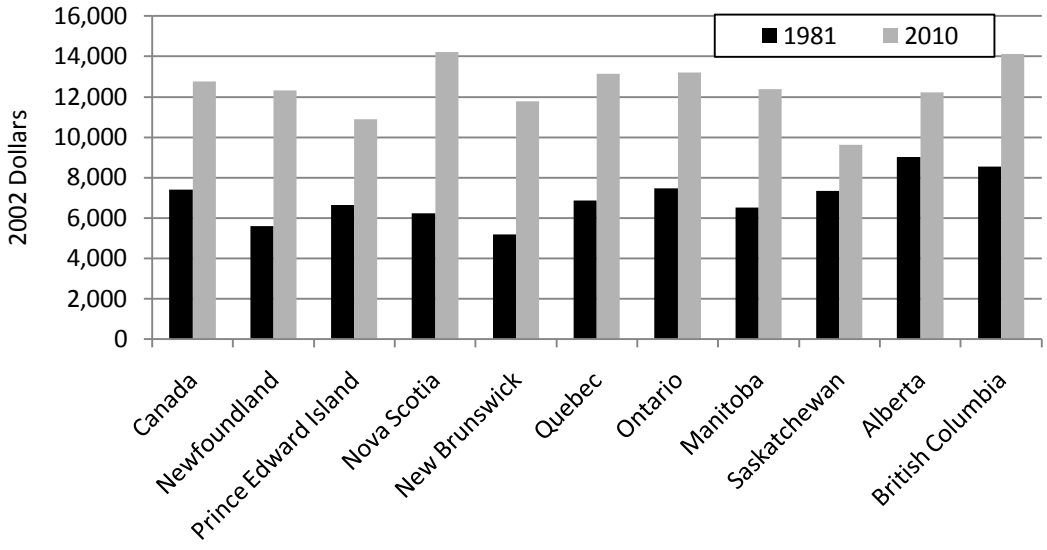
1986, and 1992 from Statistics Canada (1995). Estimates for 1998 and 2005 are taken, respectively, from Statistics Canada's General Social Survey and Statistics Canada (2006b). Values for other years are estimated based on the average annual growth rates implied by the Statistics Canada data. Estimates of the value of unpaid work, based on a generalist replacement wage, are drawn from Statistics Canada (1995) for 1981, 1986 and 1992; values after 1992 are extrapolated using the growth rate of real wages over the 1992-2009 period.

a. Trends in Canada

The value of unpaid work in the Canadian economy in 2010 was $12,774 per capita in 2002 dollars, up 72.5 per cent (or 1.90 per cent per year) from $7,406 in 1981 (Appendix Table 5). Unpaid work accounted for the second largest share of total consumption flows at nearly one third (Chart 7).

Changes in the per-capita value of unpaid work reflect trends in three factors: the actual hours of unpaid work of the working age population, the rate of increase in the generalist replacement wage that is used to value unpaid work, and the rate of growth of

Chart 11: Per-capita Value of Unpaid Work, Canada and the Provinces, 2002 Dollars, 1981 and 2010



Source: Appendix Table 5

the working age population compared to the total population. The per-capita number of hours of unpaid work in Canada was 1,191 in 2010, only 4.8 per cent higher than the 1981 level of 1,137 hours. Most of the increase in the per-capita value of unpaid work over the period reflected changes in the replacement wage rate for unpaid work, which increased 55.0 per cent from $8.59 per hour in 1981 to $13.22 per hour in 2010 (in 2002 dollars). Growth of the working age population (from 75.8 per cent to 81.1 per cent of the total population) also contributed to the increase in the value of unpaid work. Finally,

since wages are deflated with the CPI and the value of unpaid work is deflated with the GDP deflator, the faster growth of the CPI relative to the GDP deflator (0.17 per cent per year) also led to growth in the measured value of unpaid work.

b. Trends in the provinces

Among the provinces, Nova Scotia had the largest value of unpaid work in 2010 at $14,235 per capita (Chart 11). British Columbia was second, with unpaid work valued at $14,132 per capita. The lowest value was Saskatchewan's $9,610. The value of unpaid work increased in every province over the 1981-2010 period. The greatest growth over the period was 128.0 per cent (or 2.88 per cent per year) in Nova Scotia. New Brunswick was immediately behind with growth of 127.7 per cent (also 2.88 per cent per year).

v. Regrettable Expenditures

Most expenditures can be assumed to increase well-being because they are spent on the acquisition of things that people desire. Some expenditures, however, are spent to prevent or ameliorate undesirable outcomes. Since people would be better off if such expenditures were not necessary, they represent a reduction in well-being rather than an increase. These are called 'regrettable expenditures.' In this report, regrettable expenditures comprise four components: the costs of commuting, including transportation and time use; the costs of crime, including security measures, repair of damaged property, and medical and legal expenses; the costs of household pollution abatement, including devices to improve air and water quality in the home; and the costs of automobile accidents, including medical and legal expenses and repair costs. The sum of these costs is subtracted from total consumption flows to account for the fact that they do not contribute to well-being, and indeed may detract from it.

a. Trends in Canada

In 2010, regrettable expenditures per capita were $3,235 in 2002 dollars (Appendix Table 6). This total includes the costs of automobile accidents, commuting, crime, and household pollution abatement.[11] Regrettable expenditures rose 84.2 per cent in Canada over the 1981-2010 period, an average annual rate of advance of 2.13 per cent. As estimates since 1994 are based on extrapolations, growth rate trends during this period may be misleading.

b. Trends in the provinces

Among the provinces, the values of regrettable expenditures per capita were all within $500 of the national average in 2010. The largest value was $3,617 in Alberta; the smallest was $2,860 in Prince Edward Island. The most significant growth over the 1981-2010 period was 148.1 per cent (or 3.18 per cent per year) in Newfoundland.

[11] Estimates of regrettable expenditures for the 1981-94 period are from Messinger (1997). Post-1994 estimates are extrapolations based on the growth rate of the 1989-1994 period.

vi. Life Expectancy

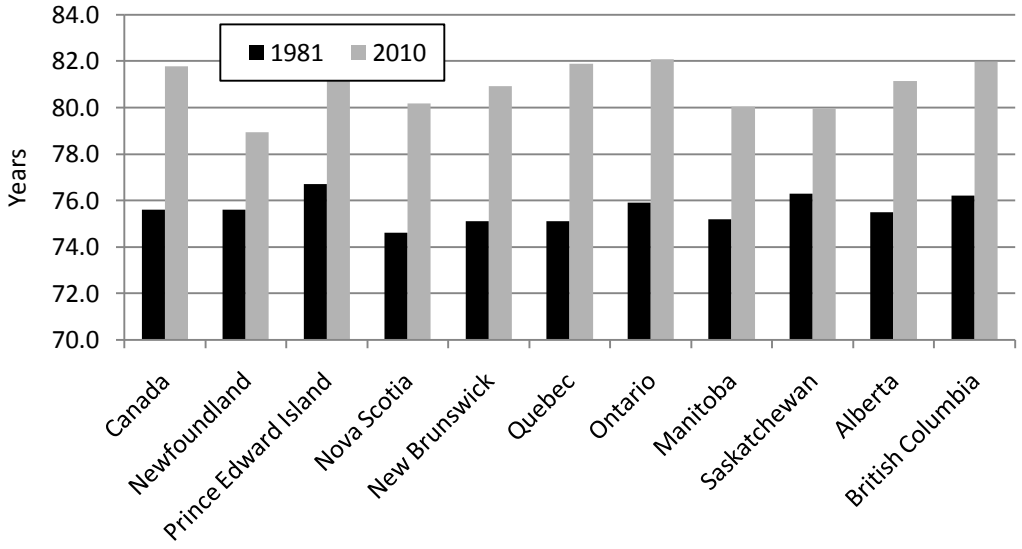
a. Trends in Canada

The final adjustment to consumption flows is for life expectancy, which has risen from 75.6 years in 1981 to an estimated 81.8 years in 2010, an increase of 8.2 per cent (Chart 12).[12] Life expectancy advanced at 0.27 per cent per year over the 1981-2010 period, and annual growth was steady across the sub-periods (0.28 per cent in 1981-89, 0.24 per cent in 1989-2000, and 0.29 per cent in 2000-2008). Total consumption flows in 2010 are therefore augmented by 8.2 per cent to reflect the additional consumption arising from increased longevity.

b. Trends in the provinces

Newfoundland had a life expectancy of 78.9 years in 2010, the lowest of the Canadian provinces, while Ontario had the highest at 82.1 years (Chart 12). Newfoundland's growth in life expectancy was also the lowest over the 1981-2010 period, at 4.4 per cent (or 0.15 per cent per year), although the growth rate picked up over

Chart 12: Life Expectancy at Birth, Canada and the Provinces, Years, 1981 and 2010



Source: Appendix Table 4

the sub-periods. The largest growth over the 1981-2010 period was 9.0 per cent (or 0.30 per cent per year) in Quebec; Quebec's 1981 life expectancy of 75.1 years was second-lowest in Canada, but the province's 2010 value of 81.9 years was among the highest.

[12] Life expectancy estimates are currently available to only 2006. The 2007 and 2008 estimates are extrapolated using the average growth rate for the 2000-2006 period.

vii. Total Adjusted Consumption Flows

a. Trends in Canada

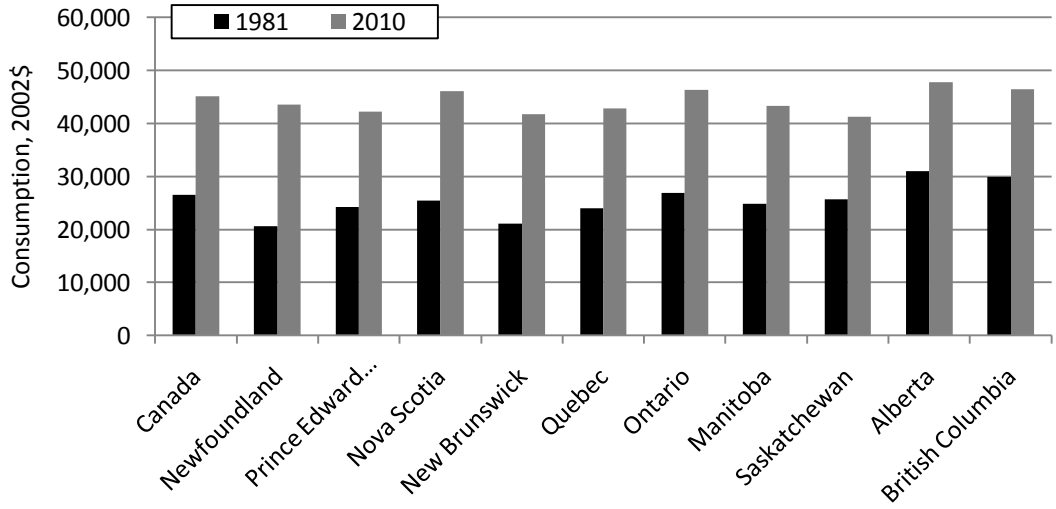
Total per-capita consumption is computed by summing family size-adjusted private consumption, government expenditures on goods and services, and unpaid work, subtracting regrettable expenditures, and then adjusting the total for the increase in life expectancy. It is this adjusted total consumption flows series that is scaled to generate the index of the consumption domain of the overall Index of Economic Well-being (Chart 14).

In 2010, total consumption flows on a per-capita basis amounted to $45,117 (2002 dollars), up 70.0 per cent or, 1.85 per cent per year, from $26,544 in 1981 (Table 3 and Chart 13). Per-capita consumption experienced strong positive growth in all three sub-periods; it grew 2.01 per cent per year over 1981-1989, 1.76 per cent per year over 1989-2000, and 1.99 per cent per year over 2000-2008.

b. Trends in the provinces

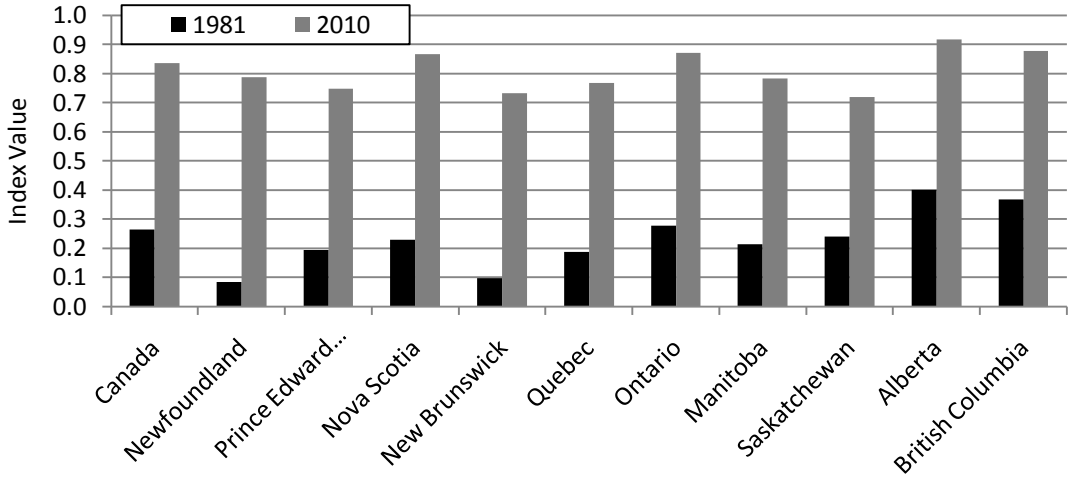
Among the provinces, Alberta had the highest per-capita total consumption flows in 2010 with $47,739, followed by British Columbia with $46,462 and Ontario with $46,288 (Chart 13). Saskatchewan and New Brunswick had the lowest flows with

Chart 13: Total Adjusted Consumption per Capita, Canada and the Provinces, 1981 and 2010, $2002



Source: Table 3a

Chart 14: Index of the Consumption Domain in Canada and the Provinces, 1981 and 2010



Source: Table 3

$41,310 and $41,773, respectively. Newfoundland enjoyed the highest growth in total consumption per capita over the 1981-2010 period at 111.1 per cent followed by New Brunswick at 98.2 per cent. These numbers suggest that the regional economic disparities, in terms of total consumption, are becoming less significant over time. Indeed, all four of the Atlantic Provinces experienced growth in total consumption above the Canadian average over the period.

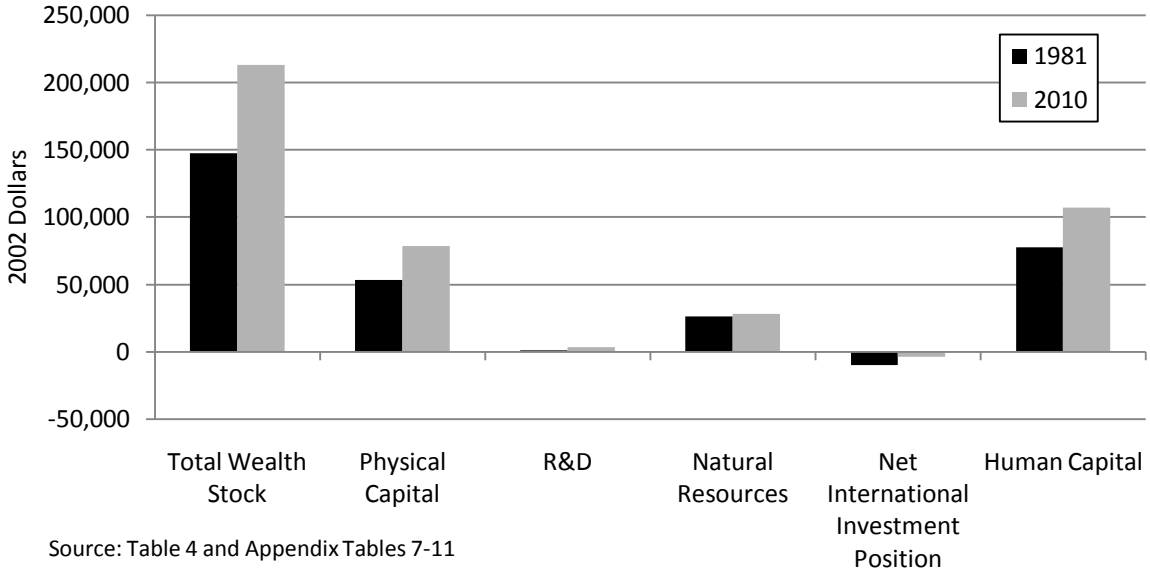
The linear scaling procedure is applied to the total adjusted consumption flows data to compute the scores for the index of the consumption domain. The scaling procedure does not affect the rankings of provinces. The index of the consumption domain was 0.836 in Canada in 2010, up 0.571 (or 215.5per cent) from 0.265 in 1981. Among the provinces, the index was greatest in Alberta, at 0.917 (Chart 14). British Columbia was second, at 0.877, followed by Ontario at 0.872. Saskatchewan had the lowest score at 0.719. The index of consumption increased significantly in all provinces over the 1981-2010 period. The most remarkable increase was in Newfoundland, where the index increased by 0.705 points from 0.083 in 1981 to 0.788 in 2010. Alberta had the slowest growth in consumption domain, but its consumption score was highest among the provinces in both 1981 and 2010.

D. Trends in the Components of the Stocks of Wealth Domain

As noted earlier in the report, a society's stocks of wealth – both manmade and naturally occurring – determine how sustainable its current level of consumption really is. The wealth domain, which could equally well be called the sustainability domain, consists of five main components: the physical capital stock, the R&D stock, the stock of natural resources, the stock of human capital, and the net international investment position. One adjustment is made to the sum of these five components: to account for the social costs of environmental degradation, we subtract the estimated annual cost of

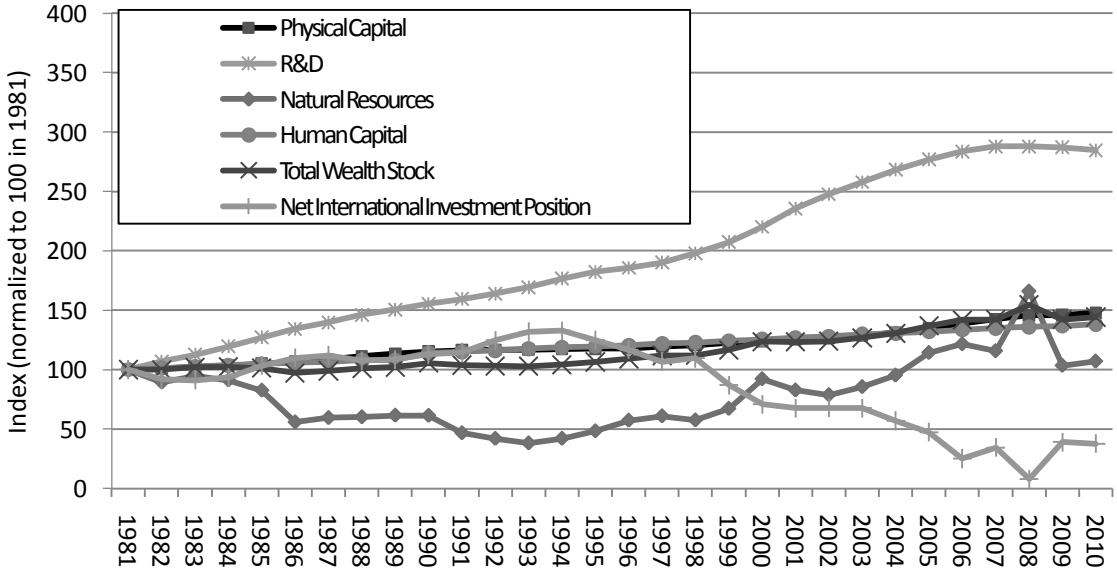
greenhouse gas emissions. Chart 15 shows the levels of each component in 1981 and 2010, while Chart 16 illustrates their growth over the 1981-2010 period. The stock of human capital accounts for the largest share of total wealth in Canada, followed by physical capital and then natural resources. The social cost of greenhouse gas emissions is not included in the charts; it is very small relative to total wealth, which partly reflects the fact that it is a flow concept being used to adjust the total wealth stock on a year-to-year basis.

Chart 15: Components of the Wealth Domain, Canada, 2002 Dollars, 1981 and 2010



Source: Table 4 and Appendix Tables 7-11

Chart 16: Trends in Per-capita Wealth and its Components, Canada, 1981-2010, Indexed, 1981=100



Source: Table 4 and Appendix Tables 7-11

i. Physical Capital

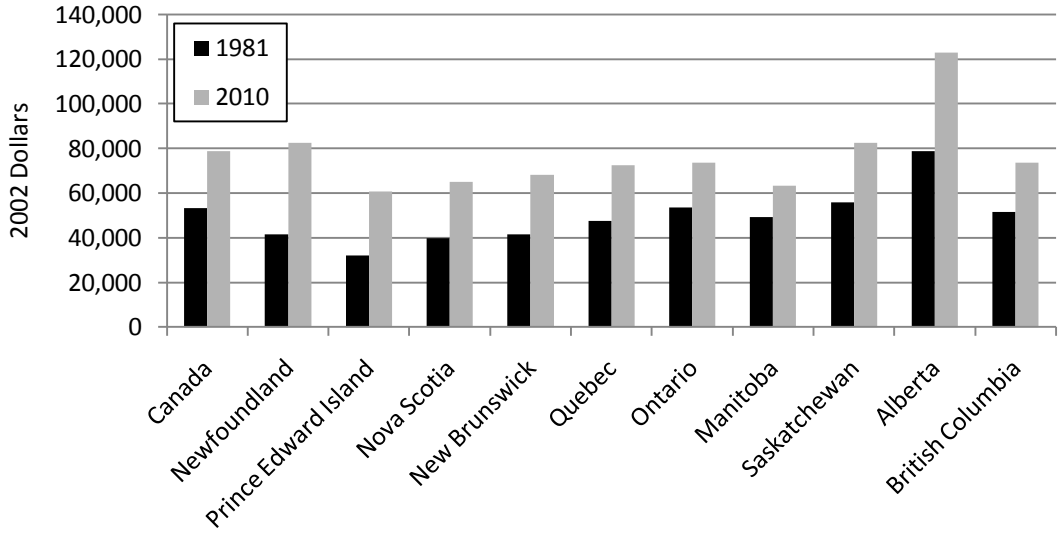
a. Trends in Canada

In 2010, the per-capita stock of physical capital in Canada, defined as the residential and non-residential net capital stock based on geometric depreciation, was $78,748 in 2002 dollars (Appendix Table 7 and Chart 15). Physical capital accounted for about one third of the total wealth stocks, the second highest of all the components (Chart 15). Over the 1981-2010 period, the capital stock in Canada increased 47.9 per cent, a 1.36 per cent average annual rate of growth. The growth rate of the capital stock was positive throughout the period (Chart 16), even during recessions. The 1989-2000 period, however, saw slightly slower per-capita capital stock growth (0.81 per cent per year) than the 1981-1989 period (1.59 per cent per year) and the 2000-2008 period (2.03 per cent per year).

b. Trends in the provinces

Alberta had, by far, the largest per-capita stock of physical capital of all the provinces with $122,918 in 2002 dollars (Chart 17). Saskatchewan was a distant second with $82,599, while Prince Edward Island had the lowest level in 2010 with $60,856. Newfoundland enjoyed the strongest growth rate in per-capita capital stock over the 1981-2010 period at 98.7 per cent, or 2.40 per cent per year. Manitoba had the lowest overall growth over the period at 28.9 per cent, or 0.88 per cent per year. Similar to the national pattern, growth of the capital stock was positive in all three sub-periods. However, there were differences across the sub-periods in terms of the rate of growth. Some provinces have had their strongest growth in the 2000-2008 period (for example, Prince Edward Island and British Columbia), while others had their strongest growth in the 1981-1989 period (for example, Newfoundland).

Chart 17: Per-capita Net Capital Stock, Canada and the Provinces, 2002 Dollars, 1981 and 2010



Source: Appendix Table 7

ii. R&D Capital

a. Trends in Canada

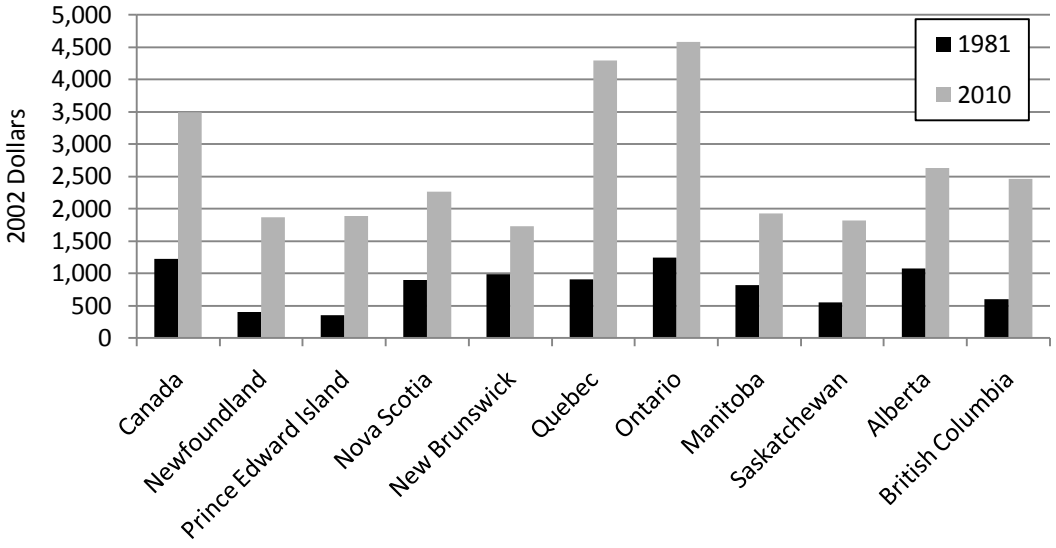
In 2010, the per-capita stock of R&D in Canada was $3,495 (2002 dollars), accounting for less than 2 per cent of the total stocks of wealth (Appendix Table 8 and Chart 15).[13] This low share reflects both the relatively low share of GDP devoted to R&D (around 2 per cent) and the high depreciation rate of 20 per cent assumed for R&D stocks. From 1981 to 2010 R&D stocks increased 184.6 per cent or 3.67 per cent per year, much faster than the rate of advance of the other components of wealth (Chart 16). Growth in R&D stocks was positive through the period, although somewhat faster in the 1980s (5.25 per cent per year) than in the 1990s (3.52 per cent per year) and over 2000-2008 (3.41 per cent per year).

b. Trends in the provinces

The provincial levels of per-capita stock of R&D were quite varied in 2010 (Chart 18). Ontario and Quebec had the highest levels at $4,585 and $4,293 (in 2002 dollars), respectively, whereas New Brunswick and Saskatchewan had the lowest levels at $1,726 and $1,816. Prince Edward Island had the highest growth in the per-capita stock of R&D at 434.4 per cent over the 1981-2010 period, over 50 percentage points above the second highest (Quebec with 375.1 per cent).

[13] We compute the stock of R&D using official data on gross annual R&D expenditures (from Statistics Canada CANSIM Table 358-0001) and the GDP deflator. We assume a depreciation rate of 20 per cent per year. Thus, in a given year, the accumulated stock of R&D is that year's gross R&D expenditures plus 80 per cent of the previous year's accumulated stock. The question of how to measure R&D has challenged researchers for some time. Under the SNA 1993 accounting system (the current international standard for national accounting), R&D expenditures are counted as intermediate inputs for businesses or as current consumption for government and non-profit organizations. The new SNA 2008 recommends the capitalization of R&D, so that annual R&D expenditures represent a form of investment in an R&D capital stock. Our approach is consistent with that recommendation.

Chart 18: R&D Stock Per Capita, Canada and the Provinces, 2002 Dollars, 1981 and 2010



Source: Appendix Table 8

iii. Natural Resources

a. Trends in Canada

Data on natural resource stocks are drawn from Statistics Canada's national environmental accounts. In 2010, the total value of natural resources was $955.4million in current dollars, reflecting both the physical quantities and the prices of the resources. Timber stocks accounted for roughly 16 per cent of that total and subsoil resource stocks made up the rest.[14] Estimates for land, largely reflecting urban and agricultural land values, are available, but are not included in the definition of natural resources used in the Index of Economic Well-being. Estimates of the value of fish stocks and water have not yet been developed by Statistics Canada.

The per-capita value of natural resources in Canada in 2010 was estimated by Statistics Canada at $28,010 (2002 dollars), up 59.3 per cent (or 0.23 per cent per year) from $26,185 in 1981 (Appendix Table 9 and Chart 15). Natural resources accounted for 13.1 per cent of total wealth stocks.[15] The value of natural resources declined 5.91 per cent annually between 1981 and 1989, the only one of the stocks of wealth that experienced this trend. Short-term swings in the value of natural resources largely reflect commodity price movements as changes in the physical stock of natural resources

[14] Statistics Canada provides estimates of the value of timber and subsoil resources (oil and minerals); official estimates for other important resources, such as water and fish stocks, are unavailable. Statistics Canada's data are available only to 2007. For timber, the 2008 value is extrapolated using the compound annual growth rate from the 2002-2007 period. For subsoil resources, the 2008 value is assumed to be equal to the 2007 value; it would be inappropriate to use past trends to project the 2008 values in these cases because the time series fluctuate significantly with resource prices from year to year.

[15] For a detailed discussion of the methodologies used by Statistics Canada to estimate the value of natural resources, see Statistics Canada (2006a).

through exhaustion and discoveries are slow. For example, the almost 50 per cent fall in the value of natural resources in 1986 reflected the collapse in oil prices that year, while a similar increase between 2002 and 2005 was due to rising commodity prices.

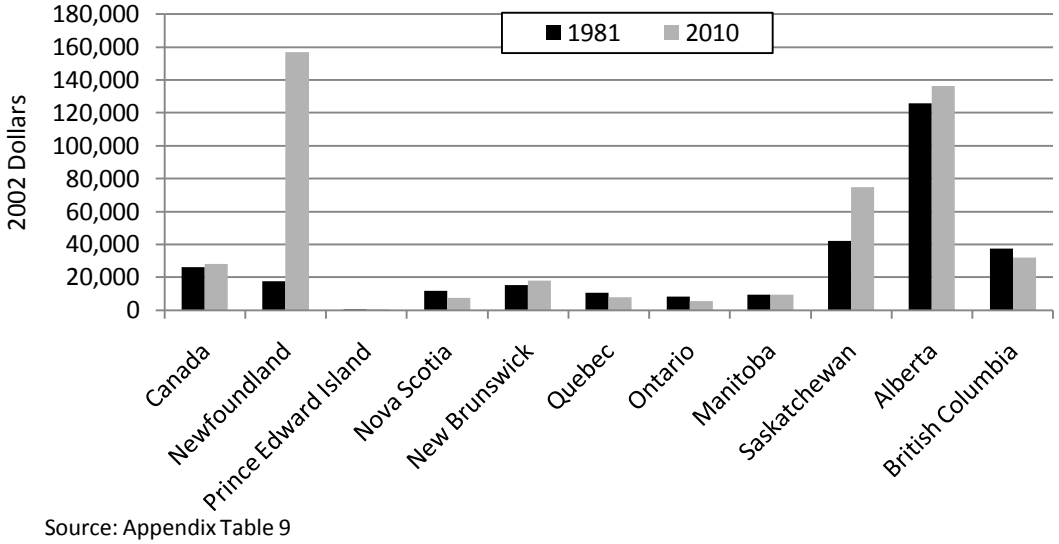
b. Trends in the provinces

Not surprisingly, the value of natural resources per capita varied tremendously across the provinces in 2010. Newfoundland and Alberta were the distant outliers, with values of $157,098 and $136,304 per capita, respectively – both well above the third highest value of $74,910 in Saskatchewan (Chart 19). At the other extreme, the value in Prince Edward Island was a meager $448 per capita. Moreover, the value of natural resources was the most volatile component of total wealth for many of the provinces. While the value of Newfoundland's stock grew 799.7 per cent over the 1981-2010 period, the value actually fell 3.38 per cent per year from 1980-1989, before growing remarkably in the following periods. In Alberta, the value of natural resources per capita increased only 8.3 per cent over the whole period, with the 10.4 per cent annual decline during the 1981-1989 period accounting for the low rate of growth.

c. A note on natural resource valuation

The valuation of natural resources is very uncertain and an important caveat needs to be made. In official estimates for 2009 (the most recent year for which official data are available), Statistics Canada placed a value of $441.2 billion ($13,085 per capita) on

Chart 19: Per-Capita Stock of Natural Resources, Canada and the Provinces, 2002 Dollars, 1981 and 2010



Source: Appendix Table 9

established crude bitumen reserves, better known as oil sands reserves. This is based on the estimate that the oil sands contain 22.0 billion barrels of oil.[16] However, most observers think this reserve estimate is much too low given the advances that have been made in the technologies used to exploit the oil sands. For example, the Canadian Association of Petroleum Producers (CAPP) estimates the oil sands' potential at 175 billion barrels, placing Canada second only to Saudi Arabia in terms of oil reserves.[17]

If this estimate is accurate, the figures of Canada's natural resource wealth presented in this report are wildly underestimated. Under the assumption of oil at $70 Canadian per barrel, and an estimated cost of extraction of $19 per barrel, Sharpe *et al.* (2008) estimate that the net present value of the oil sands is $1.48 trillion under the 175 billion barrel reserve assumption. Given Canada's population of 34.1 million in 2010, this translates into natural resource wealth for Canadians of $43,402 per capita from the oil sands alone. That is greater than Statistics Canada's official estimates of *total* natural resource wealth per capita. From this perspective, the estimates of well-being presented in this report, based on official estimates of natural resource wealth, greatly underestimate the stocks of wealth and the future well-being of Canadians.[18] If the price of oil stays at current levels, then from a purely economic perspective (not taking into account the full social costs of environmental degradation), the wealth of the oil sands will likely contribute massively to the well-being of future generations of Canadians.

iv. Net International Position

a. Trends in Canada

Statistics Canada publishes data on Canada's annual end-of-year net international investment position in current dollars. In 2010, Canada had a net asset position of negative 153.2 billion according to Statistics Canada. We transform the current-dollar estimates to 2002 dollars using the GDP deflator, also from Statistics Canada.

In 2002 dollars, Canada's net international investment position in 2010 was negative $126.2 billion dollars, equivalent to negative $3,701 per capita (Chart 20). Canada's international indebtedness rose is the 1980s and early 1990s, peaking at $13,022 per capita in 1994, up from $9,819 in 1981. It then had a strong downward trend until 2008, reflecting Canada's large current account surpluses. In 2009, Canada's net asset position deteriorated once more.

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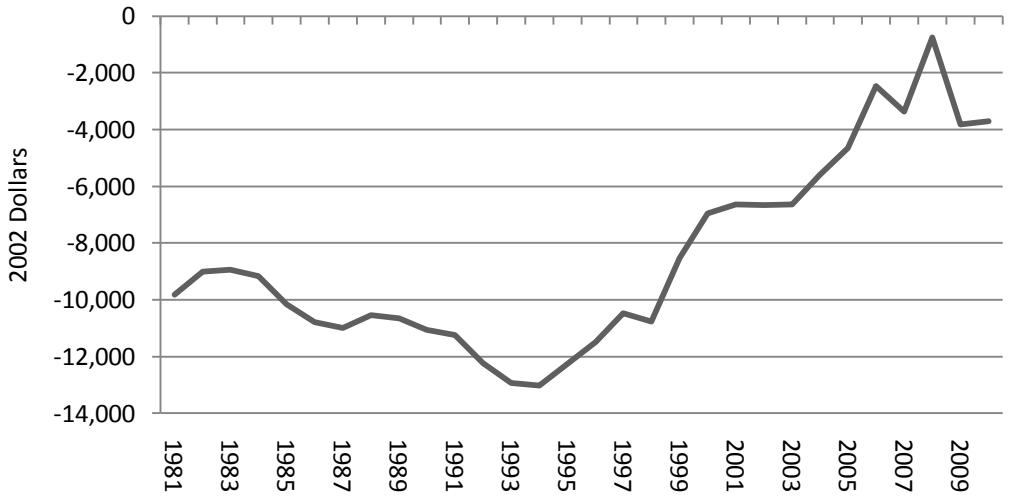
[16] See Statistics Canada's Natural Resource Stock Accounts, CANSIM Tables 153-0005 and 153-0012.

[17] According to the CAPP website: "Canada's oil sands deposits contain as much as 175 billion barrels of economically viable oil, or enough oil to meet the country's current energy needs for 500 years. With current technology, Canada's oil sands are second only to Saudi Arabia in global oil reserves. As technology improves, so too does the potential to produce more oil from the oil sands." http://www.capp.ca/default.asp?V_DOC_ID=1162.

[18] A key point made by Sharpe *et al.* (2008) is that the net present value of a natural resource is heavily dependent upon the assumed time path of exploitation. The Sharpe *et al.* estimate of the value of the Alberta oil sands was based on projected short-term rates of exploitation that may no longer be valid, since the global recession and the collapse of oil prices after the summer of 2008 led to the postponement of many oil sands development projects. Pushing resource exploitation further into the future reduces the net present value of the resource because future resource revenues are subject to intertemporal discounting. Nevertheless, it remains likely that the official Statistics Canada estimates of the value of the oil sands understate the true value of the resource because they do not value the full quantity of exploitable oil.

Chart 20: Per-capita Net International Investment Position, Canada, 2002 Dollars, 1981-2010



Source: Appendix Table 10

b. Trends in the provinces

No data are available on the provincial distribution of foreign assets and liabilities. Therefore, provincial figures for net international investment position are constructed by weighting the national figure by provincial shares of national GDP, on the assumption that such assets and liabilities directly related to the amount of economic activity in a province. Since the provincial values are constructed in this way, they are of little interest in and of themselves. In 2010, they ranged from -$4,937 per capita in Alberta to -$2,668 per capita in Prince Edward Island.

v. Human Capital

a. Trends in Canada

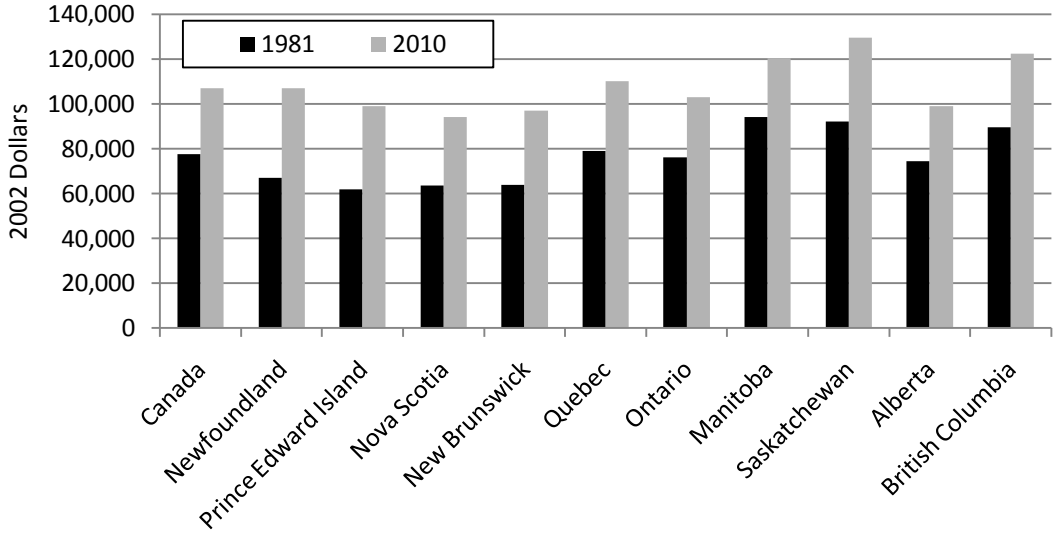
Human capital in the Index of Economic Well-being is defined on a cost basis as the accumulated private and public expenditures on education at all levels. In 2010, the per-capita value of human capital in Canada was $107,093 (2002 dollars).[19] Representing 50 per cent of wealth stocks, human capital is the most important component of wealth stocks – even more important than physical capital (Chart 15). Per-capita human capital rose 38.1 per cent over the 1981-2010 period, an average annual rate of increase of 1.12 per cent. The annual rate of growth was somewhat faster in the 1990s (1.38 per cent) than in the 1980s (0.95 per cent) and the 2000-2008 period (1.06 per cent).

[19] The value of human capital is based on estimates of the cost of education in 2006/2007 drawn from Statistics Canada (2011).

b. Trends in the provinces

Once again, there were considerable differences across provinces in the per-capita value of human capital in 2010. British Columbia had the highest value at $129,460 per capita, followed by British Columbia at $122,491 and Manitoba at $120,332 (Chart 21). Nova Scotia and New Brunswick had the lowest values at $94,110 and $96,904 per capita, respectively. All provinces experienced growth in the values of human capital per capita in excess of 25 per cent over the 1981-2010 period, with New Brunswick, Newfoundland and Prince Edward Island all enjoying rates above 50 per cent. Most provinces exhibited a pattern similar to the national one in terms of growth rates in the cyclically-neutral sub-periods, with the fastest growth occurring in the 1990s.

Chart 21: Per-capita Human Capital Stock, Canada and the Provinces, 2002 Dollars, 1981 and 2010



Source: Appendix Table 11

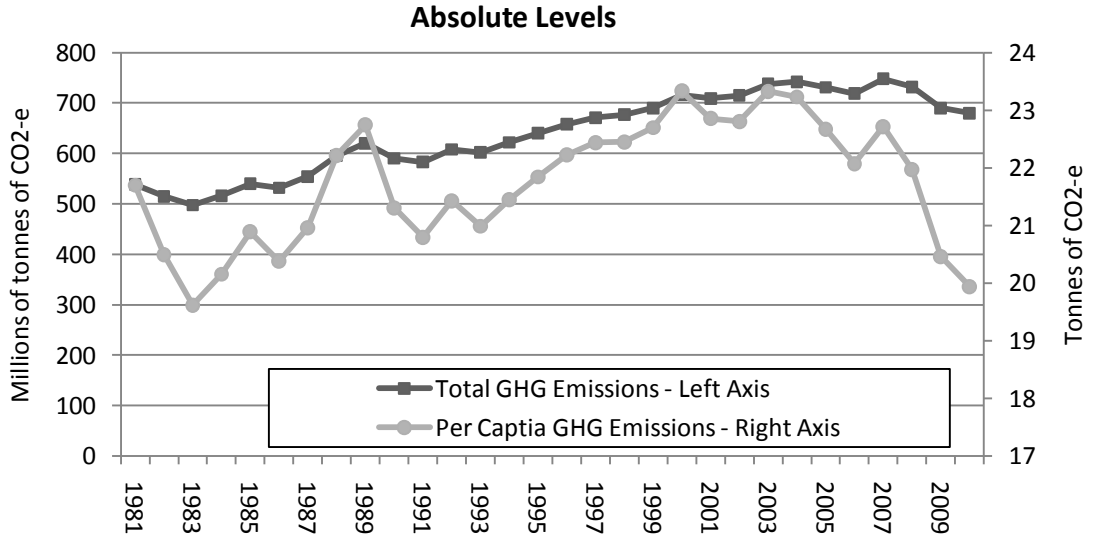
vi. Social Costs of Environmental Degradation

A negative factor affecting the sustainability of stocks of wealth is the degradation of the environment. Placing a value on the environment or the "services provided by ecosystems" is a massive and controversial task and well beyond the scope of the Index of Economic Well-being. But to highlight the importance of the environment for economic well-being, and to show that environmental issues can be accommodated in our framework for quantifying economic well-being, the Index does include estimates of the social costs of greenhouse gases, which contribute to global warning. In each year, we adjust the total wealth stock estimates by subtracting the social costs of greenhouse gas emissions in that year.

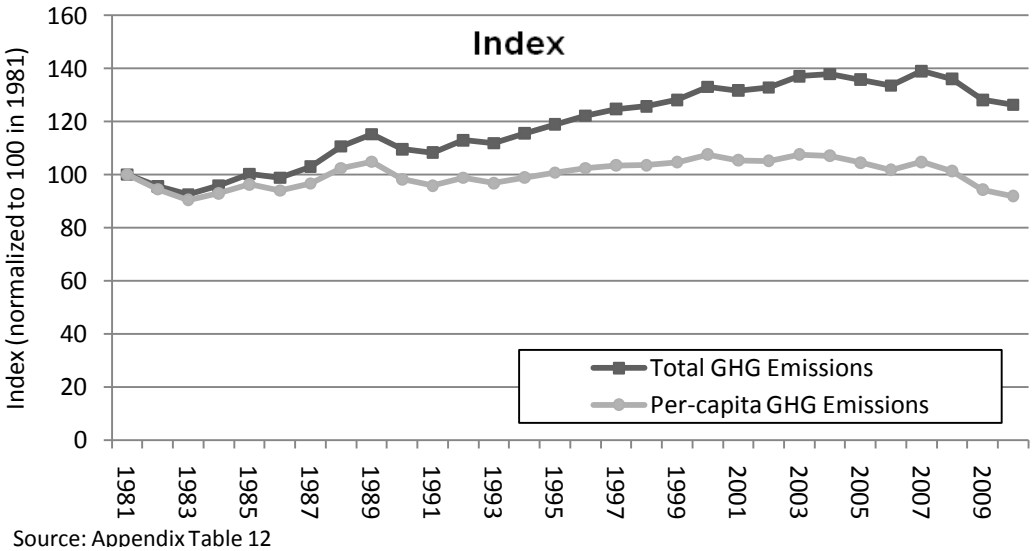
The estimates are derived by multiplying greenhouse gas emissions (measured in megatonnes of CO_2-equivalent emissions, or $MtCO_2$-e) by the social cost of such

emissions.[20] In a recent review of 211 published estimates of the social cost of carbon, Tol (2007) finds that the average estimate from peer-reviewed studies is $\$23/tCO_2$-e in

Chart 22: Trends in Total and Per-capita Greenhouse Gas Emissions, Canada, Tonnes of CO2-equivalent, 1981-2010



Source: Appendix Table 12



Source: Appendix Table 12

1998 Canadian dollars.[21] To simplify the calculations, it is assumed that all the costs of greenhouse gas emissions are borne in the jurisdiction in which the emissions are

[20] See Sharpe *et al.* (2008) for a brief discussion of the methodological challenges surrounding the estimation of the marginal social costs of GHG emissions.

[21] This corresponds to a social cost of carbon of $71 US dollars per tonne of carbon ($71/tC), the value given in Table 1 of Tol (2007). We convert it to Canadian dollars per tonne of CO_2-equivalent emissions using the molecular mass conversion factor between carbon and CO_2 (3.664 tonnes of CO_2 contain one tonne of C) and the 1998 OECD Canada-US PPP for GDP (1.187293 CAD/USD). Tol does not specify the base year for the estimates in his meta-analysis; we

produced. In reality, the effects of greenhouse gases cross borders and are global in nature, but the distribution of the costs throughout the world is not known.[22]

a. Trends in Canada

In 2010, emissions of greenhouse gases in Canada (primarily CO_2) were 680 Mt CO_2-e, up 26.3 per cent from 539 Mt CO_2-e in 1981 (Environment Canada, 2011).[23] Despite the Kyoto protocol, greenhouse emissions in Canada have been on a roughly continuous upward trend throughout the period, although they have been on a downward trend since 2004 (with the exception of 2007). Based on the marginal social cost estimate from Tol (2007), the social costs of greenhouse gases totaled $590 (2002 dollars) per capita in 2010, down 0.08 per cent from $642 in 1981. The per-capita burden of greenhouse gas costs increased by 0.59 per cent per year between 1981 and 1989 and by 0.23 per cent per year in the 1990s, but it fell by 0.75 per cent per year over the 2000-2008 period as Canada's population grew faster than its greenhouse gas emissions. Chart 22 illustrates the divergence of the trends in aggregate and per-capita GHG emissions over the 1981-2010 period.

Given that the total value of stocks of wealth in Canada was $213,056 per capita in 2010, the social costs of greenhouse gases, according to the admittedly simplistic calculations in this report, have only a marginal impact on total wealth. Everything else being held constant, Canadians' per-capita wealth would have been only 0.28 per cent higher in 2010 if per-capita greenhouse gas costs had been zero.

This figure neglects the impact that a presumed higher future social cost of GHG emissions would have on the present value of oil and gas reserves and is, of course, dependent on our assumption regarding the marginal social cost per tonne of CO_2 emitted. We have used the average of estimates from a number of studies, which themselves have a wide range of values. In future editions of the IEWB, we plan to embed programming to allow analysts to specify the shadow value they assign to CO_2 emissions.

b. Trends in the provinces

Saskatchewan and Alberta had per-capita greenhouse gas social costs much higher than all the other provinces in 2010, at $2,248 and $2,063 per capita, respectively (Chart 23). For Alberta, these costs were actually down 6.4 per cent from 1981 levels; although greenhouse gas emissions increased by 51.9 per cent over the period, the population grew 62.4 per cent. In Saskatchewan, however, per-capita GHG costs were 72.3 per cent

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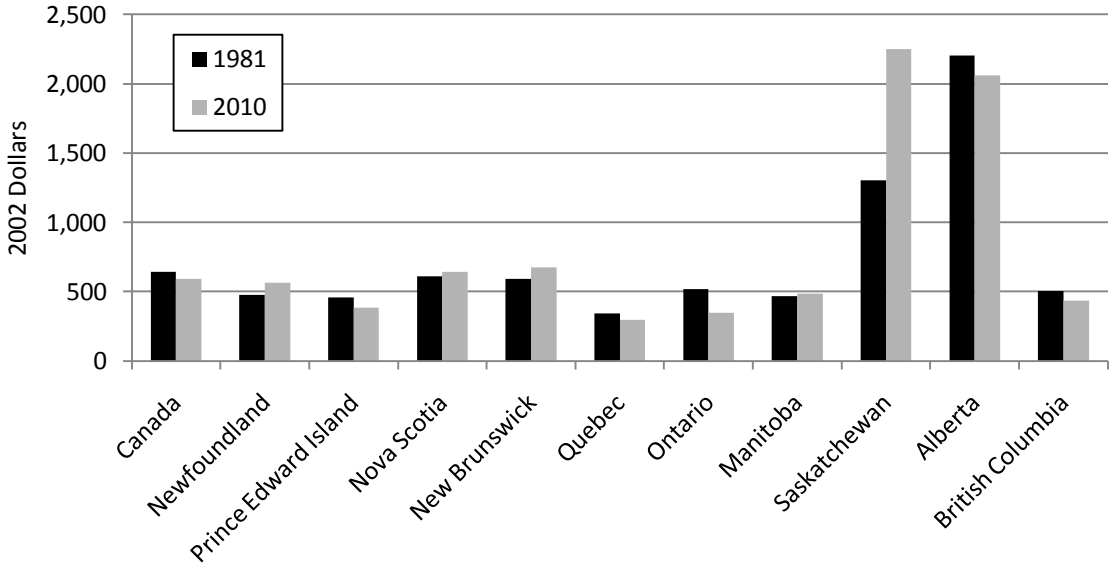
use 1998 because it is the midpoint of the time period covered by his study. In our database, we estimate the total social costs of CO_2 emissions for Canada and the provinces in 1998 dollars per tonne, then convert the totals to 2002 dollars per tonne using province-specific GDP deflators from Statistics Canada.

[22] In the companion report on the Index of Economic Well-being in OECD countries (Osberg and Sharpe, 2009), we estimate the total costs of CO_2 emissions for the world based on global CO_2 emissions and then distribute these costs in proportion to a country's share of world GDP.

[23] Aggregate GHG emissions estimates are available only to 2007. The 2008 value is extrapolated based on the compound annual growth rate from the 2002-2007 period.

higher in 2010 than in 1981, with most of the increase occurring over the 1989-2000 period. In Manitoba, New Brunswick, Nova Scotia, Newfoundland and Saskatchewan, the per-capita social costs of greenhouse gas emissions increased over the 2000-2010 period.

Chart 23: Per-capita Social Costs of Greenhouse Gas Emissions, Canada and the Provinces, 2002 Dollars, 1981 and 2010



Source: Appendix Table 12

vii. Total Wealth Stocks

a. Trends in Canada

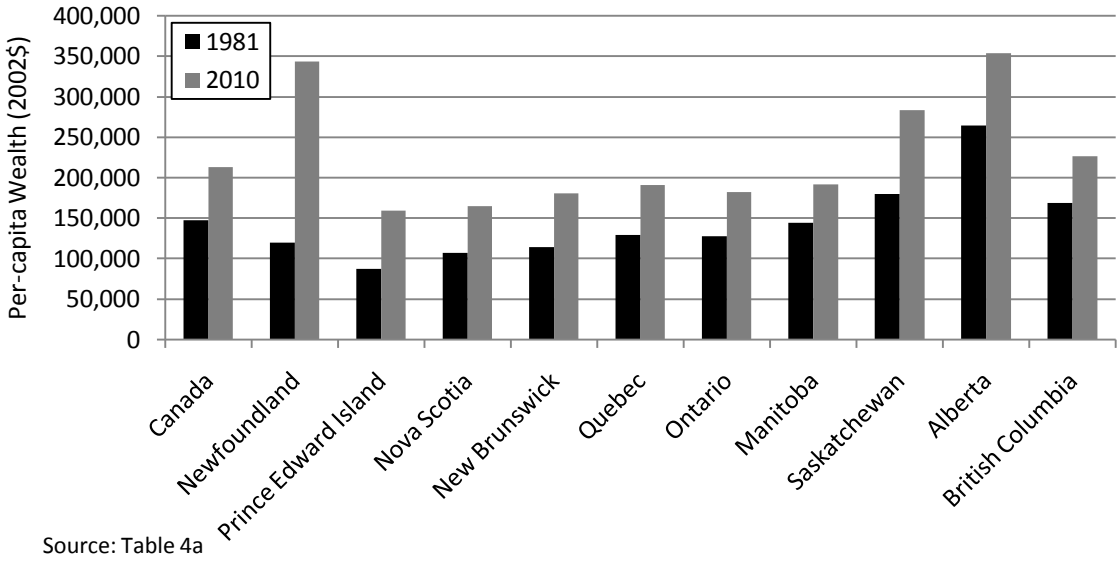
As the different components of wealth stocks are expressed in prices, total wealth stocks are the sum of the five components and the greenhouse gas adjustment. In 2010, they totaled $213,056 per capita (2002 dollars) in Canada, up 44.2 per cent from 1981 (Table 4). The rate of growth of wealth stocks was much faster in the 1990s (1.75 per cent per year) and in the 2000-2008 period(2.85 per cent per year) than in the 1980s (0.25 per cent per year). This improvement reflected several developments: the falling value of natural resources in the 1980s and the rising value since 1990; and the rising international indebtedness in the 1980s and early 1990s and the falling indebtedness between 1994 and 2009.

b. Trends in the provinces

At $353,815, Alberta had the largest total per-capita wealth stock in 2010 (Chart 24). The province also had the most volatile total wealth, shrinking at 3.29 per cent per year in the 1980s, then growing in the next two periods at 2.82 per cent per year in the 1990s and 4.30 per cent per year between 2000 and 2008. Fluctuations in the value of natural resources were responsible for these swings. Behind Alberta in 2010 were

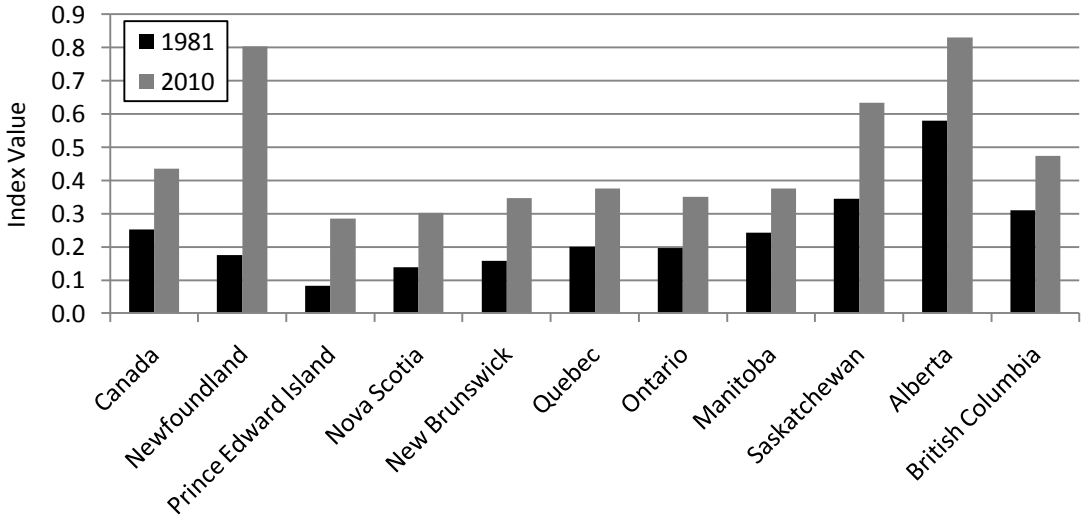
Newfoundland (with $343,900 total wealth per capita), Saskatchewan (with $283,254) and British Columbia (with $226,515). At the other end, Prince Edward Island had the lowest total wealth per capita at $159,140, followed by Nova Scotia with $165,205. Newfoundland experienced by far the fastest growth; its total per-capita wealth in 2010 was 187.1 per cent higher than its 1981 stock, which implies a growth rate of 3.70 per cent per year. Manitoba experienced the lowest growth since 1981 at 33.0 per cent.

Chart 24: Total Per-capita Wealth in Canada and the Provinces, 1981 and 2010



Source: Table 4a

Chart 25: Index of the Wealth Domain in Canada and the Provinces, 1981 and 2010



Source: Table 4

The index of the wealth domain is acquired by applying the linear scaling procedure to the total per-capita wealth data. The index was 0.436 in Canada in 2010, up 0.175 points (or 72.5 per cent) from 0.253 in 1981.

As in the case of the consumption domain, the scaling procedure does not affect the rankings of the provinces. Alberta had the highest score in the wealth domain in 2010, at 0.831 (Chart 25). It was followed by Newfoundland at 0.803 and Saskatchewan at 0.633. Prince Edward Island's score of 0.285 was lowest among the provinces. The wealth domain index increased in all ten provinces over the 1981-2010 period. Newfoundland's increase of 0.638 points was the largest among the provinces. As in the case of the consumption domain, Alberta had the lowest per cent growth in the wealth domain over the period, but had the highest wealth score in both 1981 and 2010.

E. Trends in the Economic Equality Domain

The third domain of the Index of Economic Well-being is economic equality. At current levels, a fall in equality, or rise in inequality, is considered to decrease economic well-being and vice versa. The equality domain consists in two component concepts: income inequality and poverty. We measure income inequality using the Gini coefficient, constructed by Statistics Canada for the total population of family units based on total after-tax family income.[24] To measure poverty, we use poverty intensity, which is the product of the poverty rate and the poverty gap. The poverty rate and gap are based on Statistics Canada's low-income measure rates (LIMs), [25] The poverty rate is the percentage of Canadians who live below the poverty line defined by fifty per cent of the median equivalent family income, and the average poverty gap is the average difference between the poverty line and the incomes of those whose incomes fall below it.

High poverty intensity is considered more detrimental to economic well-being than an unequal income distribution. Consequently, poverty intensity is given a weight of three quarters, and income distribution a weight of one quarter, in the determination of the overall index for the equality domain.

i. Income Inequality

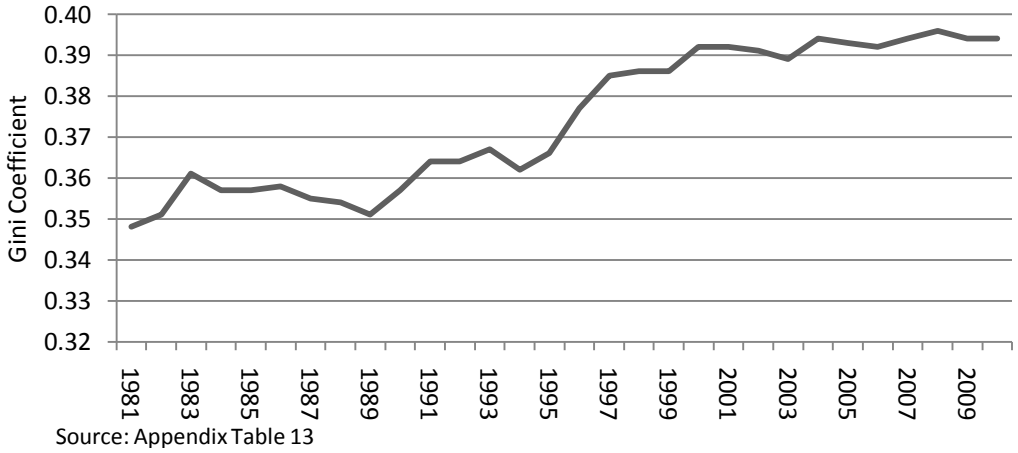
a. Trends in Canada

[24] See Footnote 9 above for the definition of a 'family.'

[25] In our work on international estimates of the Index of Economic Well-being (Osberg and Sharpe, 2009), and in past work on the Index for Canada and the provinces, we have measured poverty using the low income measure (LIM) approach, whereby the poverty line is defined as a fixed proportion (e.g. 50 per cent) of the median income. We must use this approach in international comparisons because comparable data similar to the LICOs are not available for countries other than Canada. For our work on Canada and the provinces, we previously opted to use the LICO approach for several reasons. First, the LICOs are the most common poverty measures used in the literature on Canada. Second, Statistics Canada produces official estimates of the poverty rate and gap based on location- and family size-specific LICOs; this level of precision would be difficult to achieve using the LIM approach, and in any case, we think it is better to use Statistics Canada's official data whenever possible in the interest of transparency. Recently, reliable LIM-based poverty data became available from Statistics Canada. As such, the numbers reported in the this report are based on the LIM in order to match the methodology of the international comparisons. Note that poverty rates based on the LICOs should experience a greater decline over the 1981-2010 period than rates based on the LIM. This is because the LICO is an 'absolute' measure of poverty while the LIM is a 'relative' measure; the poverty line rises with median income under the LIM approach, while the LICO does not. Indeed, while the LICO-based poverty rate for all persons fell by 2.4 percentage points in Canada between 1981 and 2007 (from 11.6 per cent to 9.2 per cent), the LIM-based rate increased by 0.6 percentage points (from 12.4 per cent to 13.0 per cent) over the same period (Osberg and Sharpe, 2009).

In 2010, the Gini coefficient for all families in Canada based on after-tax income was estimated to be 0.394, up 13.2 per cent from 0.348 in 1981 (Appendix Table 13 and Chart 26).[26] Nearly all of the increase in inequality occurred in the 1990s; the compound

Chart 26: Gini Coefficient for All Family Units, Canada, 1981-2010



Source: Appendix Table 13

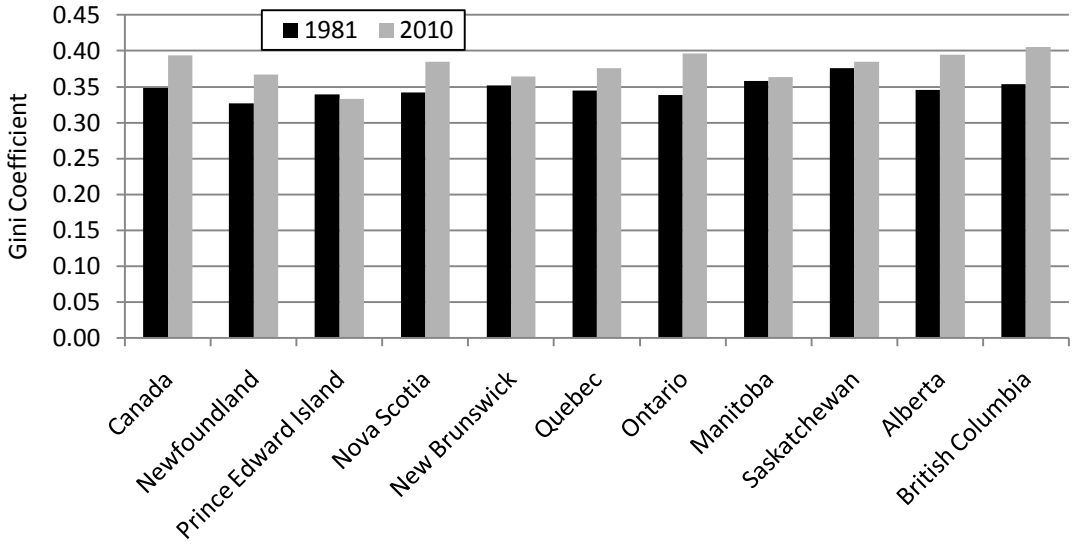
annual growth rate of the Gini coefficient over the 1989-2000 period was 1.01 per cent, compared to rates of 0.11 per cent over the 1981-1989 period and 0.13 per cent over the 2000-2008 period.

b. Trends in the provinces

Among the provinces, the highest Gini coefficient in 2010 was 0.405 for British Columbia, followed by Ontario's 0.396 and Alberta's 0.395 (Chart 27). Prince Edward Island had the lowest coefficient at 0.333. Over the 1981-2010 period, Ontario experienced the largest change, in percentage terms, at 17.2 per cent, followed by British Columbia at 14.4 per cent. Prince Edward Island was the only province where the Gini coefficient actually dropped over the period (by 1.8 per cent). As was the case for Canada as a whole, the 1990s were responsible for most of the increase in Gini coefficients across the board, while the 2000s saw a relative stabilization and, in the case of Prince Edward Island, New Brunswick, and Alberta, a drop. Saskatchewan was the sole exception to this rule, as the rate of change actually increased in the 2000-2008 period relative to the previous periods. In Saskatchewan, the rate of change increased from 0.46 per cent per year in the 1989-2000 period to 0.50 per cent per year in the 2000-2008 period.

[26] Statistics Canada estimates of the Gini coefficient are available to 2009. The 2010 value is assumed to be equal to the 2009 value.

Chart 27: Gini Coefficient for Families Based on After-tax Income, Canada and the Provinces, 1981 and 2010



Source: Appendix Table 13

ii. Poverty

a. Trends in Canada

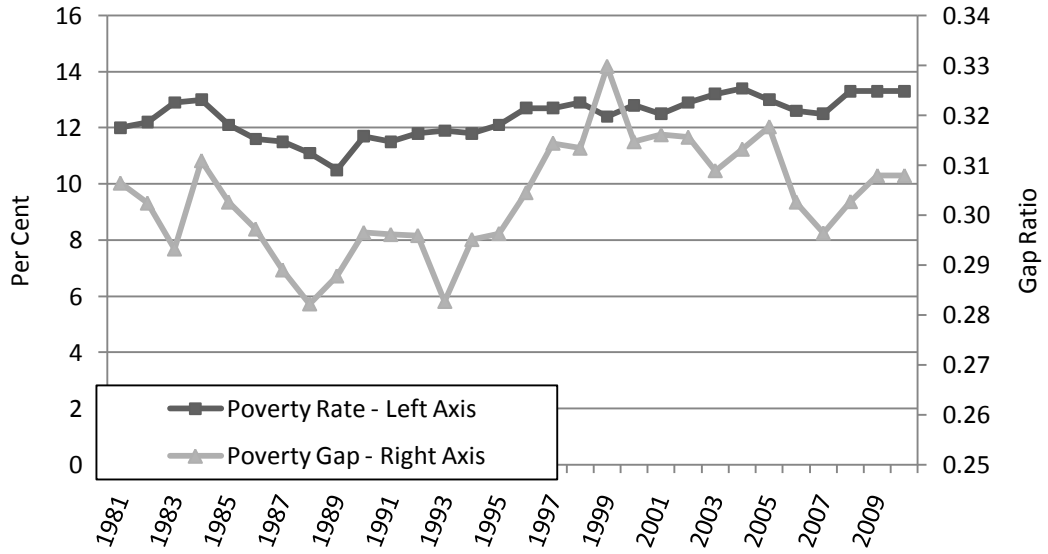
The poverty rate for all persons, based on the LIM, was estimated at 13.3 per cent in 2010, up from the 12.0 per cent figure in 1981 (Appendix Table 14 and Chart 28).[27] It peaked at 13.0 per cent in 1984, hit a low point of 10.5 per cent in 1989, rebounded to a high point of 12.9 per cent 1998, after which it fell to 12.4 per cent in 1999. The poverty rate has remained above this level and has increased to 13.3 per cent in 2010.

In 2010, the per-person poverty gap in Canada was 30.8 per cent, 0.49 per cent higher than its 1981 value of 30.6 per cent (Appendix Table 15 and Chart 28). The poverty gap has been relatively stable for the entire period, although there was a slight decline in the mid-80s that was reversed by a slight increase in the mid-90s.

Poverty intensity is the product of the poverty rate and poverty gap. The magnitude of poverty intensity in a particular place at a point in time has no meaning; the measure is useful only for comparisons across time or across jurisdictions. Poverty intensity was up 11.4 per cent in 2010 from its 1981 level in Canada (Appendix Table 16). Not surprisingly, it exhibited the same pattern as the poverty rate, falling in the late 1980s, rising until 1998, and then remaining at this general level but increasing to a slightly higher level by 2010.

[27] Statistics Canada estimates of the poverty rate and poverty gap are available to 2009; the 2010 values are assumed to be the same as the 2009 values.

Chart 28: Poverty Rate and Poverty Gap for All Persons, Canada, 1981-2010



Source: Appendix Tables 14 and 15

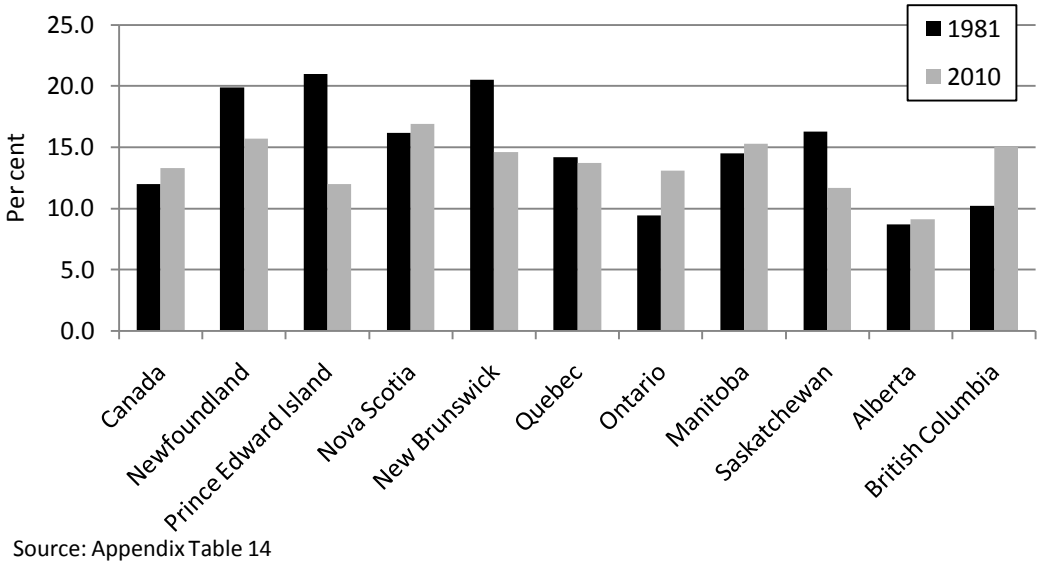
b. Trends in the provinces

The highest poverty rates among the provinces in 2010 occurred in Nova Scotia, with 16.9 per cent, and Newfoundland, with 15.7 per cent (Appendix Table 14). The lowest rate in 2010 was in Alberta, with 9.1 per cent, and Saskatchewan followed with 11.7 per cent. The poverty rate fell in half of the provinces over the 1981-2010 period. In Newfoundland, Prince Edward Island, New Brunswick, Quebec, and Saskatchewan, the LIM fell between 1981 and 2010. In the other five provinces, it increased. While the provincial trends throughout the 1981-2010 period generally followed the national one, there was considerable variety across provinces in terms of total changes over the whole period. Poverty rates in Prince Edward Island and New Brunswick dropped 9.0 and 5.9 percentage points between 1981 and 2010, while those of British Columbia and Ontario increased 4.8 and 3.7percentage points, respectively.

Prince Edward Island had the lowest poverty gap among the provinces in 2010 at 22.7 per cent; Alberta had the highest at 37.8 per cent (Appendix Table 15). Over the 1981-2010 period, the poverty gap increased in six of the provinces. There was less variability over the sub-periods – the gap increased (or decreased the least) at the fastest rate during the 1990s in every province except New Brunswick. During the most recent period, 2000-2008, the poverty gap decreased in most provinces. Prince Edward Island, British Columbia, and New Brunswick were the only provinces which experienced increases in the poverty gap in the 2000-2008 period.

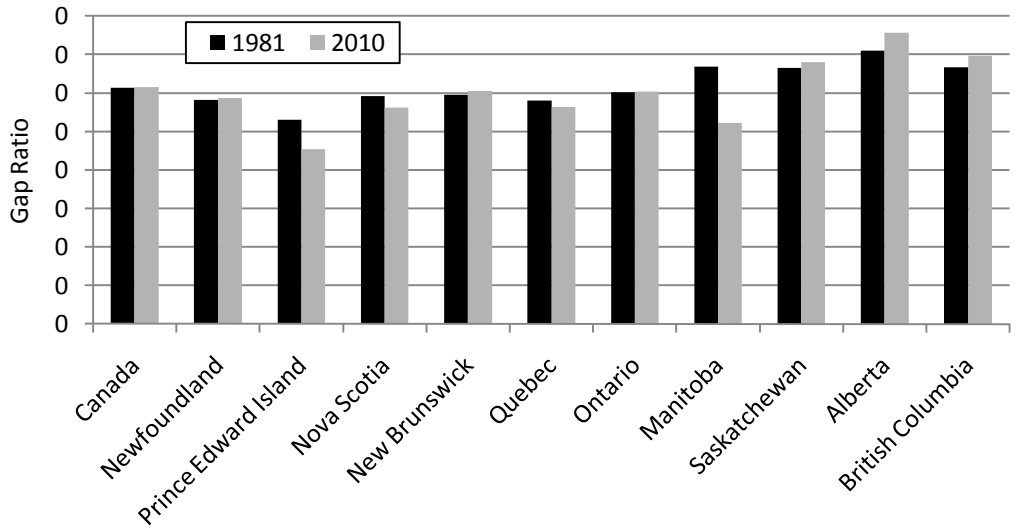
Over the 1981-2010 period, the greatest drops in poverty intensity were in Prince Edward Island and New Brunswick, at 51.1 per cent and 27.6 per cent, respectively. Poverty intensity increased over the period in three provinces: Alberta, Ontario, and British Columbia.

Chart 29: Poverty Rate Based on LIM, Canada and the Provinces, Per Cent, 1981 and 2010



Source: Appendix Table 14

Chart 30: Average Poverty Gap Based on LIM, Canada and the Provinces, 1981 and 2010



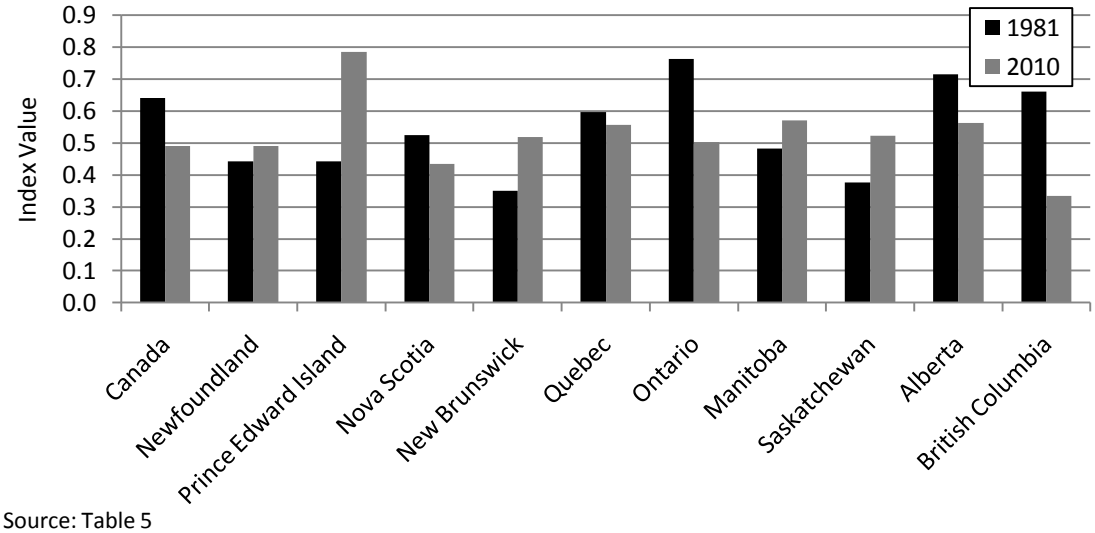
Source: Appendix Table 15

iii. Overall Economic Equality Domain

The index of the economic equality domain is the weighted sum of the scaled Gini coefficient and the scaled poverty intensity, with poverty intensity receiving three quarters of the weight. In Canada, the index was 0.490 in 2010, down 0.152 points (or

23.6 per cent) from 0.642 in 1981. Prince Edward Island had the highest score in the equality domain in 2010 at 0.786, followed by Manitoba at 0.570 (Chart 31). British Columbia had the lowest score by a considerable margin with 0.334; the next lowest score was Nova Scotia's 0.434.

Chart 31: Index of the Equality Domain in Canada and the Provinces, 1981 and 2010



Source: Table 5

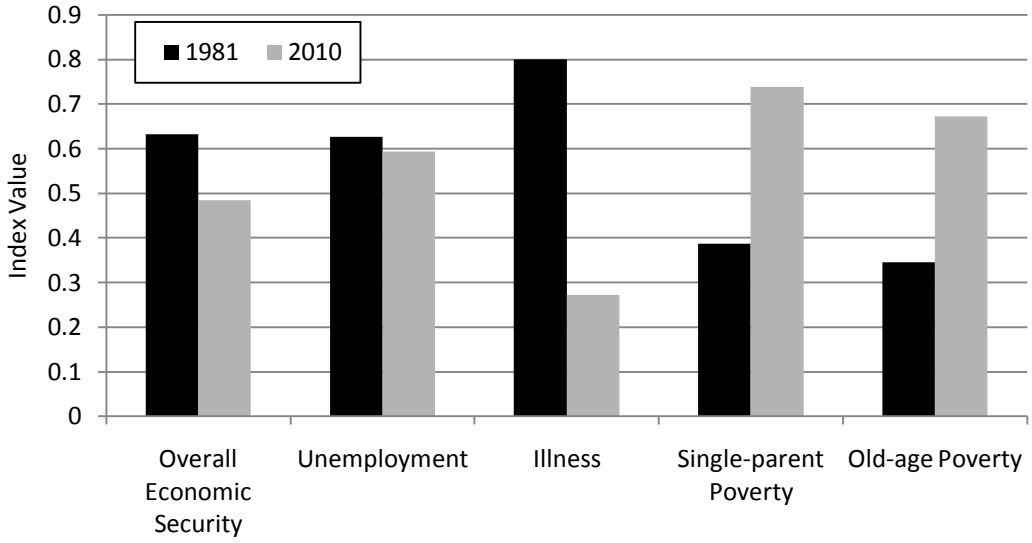
Four of the ten provinces (Prince Edward Island, New Brunswick, Manitoba, and Saskatchewan) saw considerable improvement in the equality index over the 1981-2010 period; in Prince Edward Island, the index increased by 77.8 per cent from 0.442 to 0.786 (Chart 31). Newfoundland also experienced some growth in the index of equality. On the other hand, the index dropped over the period in the rest of Canada. The largest decline was in British Columbia, where the index of equality fell by 49.5 per cent over the period.

F. Trends in the Economic Security Domain

The economic security domain is the most complex domain of the Index of Economic Well-being and the methodologies used in its construction have evolved since the Index was first released in 1998.[28] The domain consists of four components called risks to economic well-being facing the population, namely the risk imposed by unemployment, the financial risk from illness, the risk from single parent poverty, and the risk of poverty in old age. Three of these components are in turn composed of more than one variable. Chart 32 illustrates Canada's scores in the sub-indices for each of the four economic security components in 1981 and 2010, as well as the overall index of economic security. Canadians became more secure over the period in terms of the risk from single-parent poverty and old-age poverty, but these gains were more than offset by the fall in security from the financial risk of illness and of unemployment.

[28] For a discussion of the role of economic security in an index of economic well-being and an assessment of the CSLS approach to the measurement of economic security, see Heslop (2009).

Chart 32: The Economic Security Domain and its Components, Canada, 1981 and 2010



Source: Table 6 and Appendix Tables 20, 22, 26, and 29

i. Risk from Unemployment

Risk imposed by unemployment is determined by three variables: the unemployment rate, the proportion of the unemployed receiving EI benefits, and the proportion of earnings that are replaced by EI benefits.

a. Trends in Canada

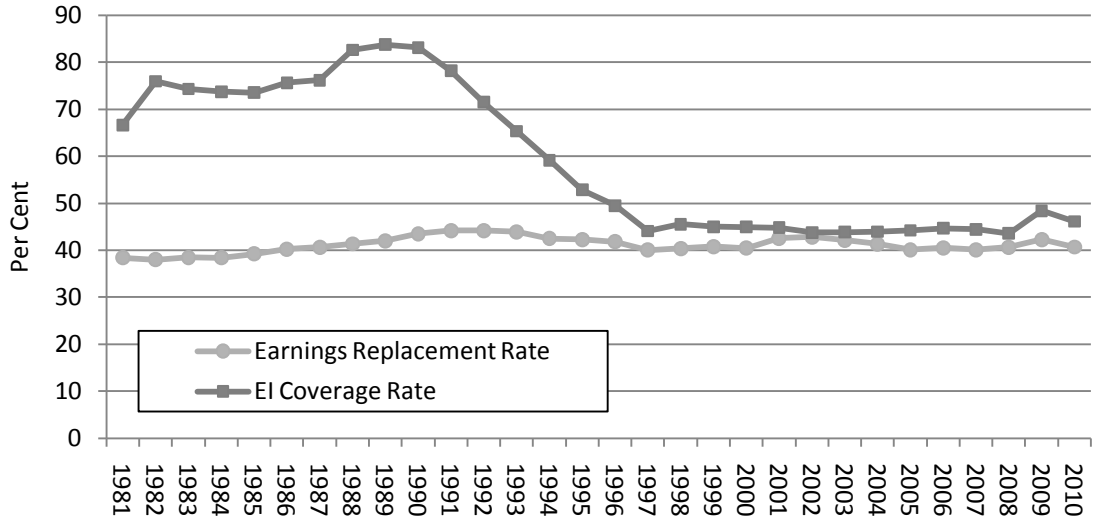
The unemployment rate was 8.0 per cent in Canada in 2010, slightly higher than the lowest rate (6.0 per cent in 2007) attained during the 1981-2010 period (Appendix Table 17 and Chart 33). The unemployment rate rose in the early 1980s, peaking at 12.0 per cent in 1983 because of a recession, then fell during the recovery and the economic expansion during the rest of the decade. This pattern repeated itself in the 1990s, with the unemployment rate rising to 11.4 per cent in 1993 and then slowly unwinding to 6.8 per cent in 2000. Unlike the early 1980s and 1990s, the early 2000s did not experience a major economic downturn, so the unemployment rate was relatively stable between 2000 and 2008, peaking at 7.7 per cent in 2002 before falling until 2007. Despite another recession in 2009, the unemployment rate did not rise to the same level as it did in earlier recessions. In 2009, the unemployment rate was 8.3 per cent, up from 6.1 per cent the previous year.

In 2010, the proportion of the unemployed receiving EI benefits in Canada was 46.1 per cent,[29] down from 66.6 per cent in 1981 and 83.8 per cent in 1989 (Appendix

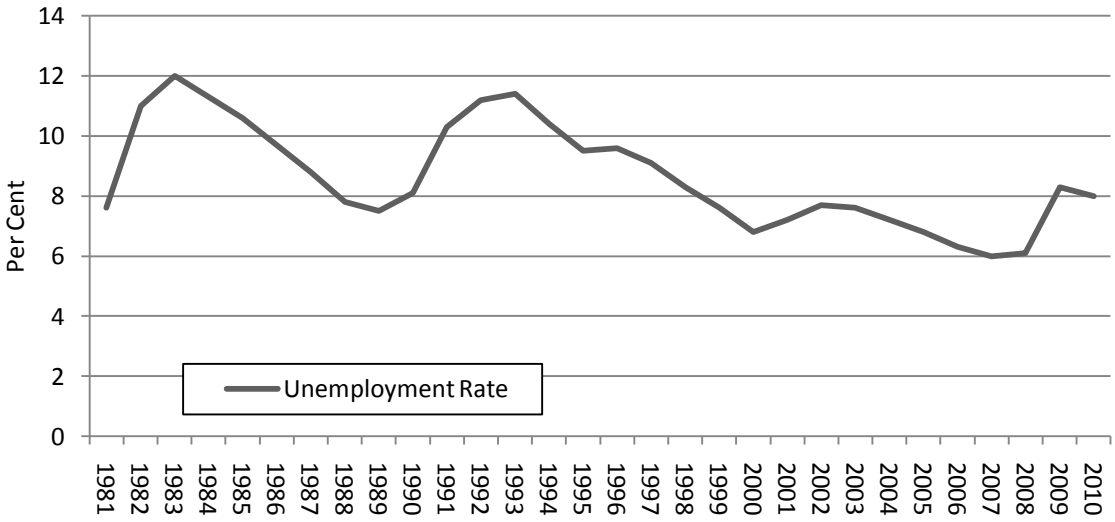
[29] Strictly speaking the 46.1 per cent is the ratio of the number of persons receiving EI benefits to the number of unemployed. It is unlikely that all EI beneficiaries are classified as unemployed by the Labour Force Survey, especially

Table 18 and Chart 33). It appears that the EI system became more generous in terms of coverage in the 1980s, but that this generosity fell significantly from 1989 to 1997, and has since stabilized, although there was a slight increase in the EI coverage rate during the recession in 2009.

Chart 33: Trends in the Unemployment Rate and the EI Replacement and Coverage rates, Canada, Per Cent, 1981-2010



Source: Appendix Tables 18 and 19



Source: Appendix Table 17

On average, EI benefits replaced 40.7 per cent of average weekly earnings in 2010 (Chart 33). This was 5.8 per cent above the 1981 replacement rate of 38.4 per cent. EI benefits peaked at 44.2 per cent in 1991 and 1992.

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in a region where there are few job prospects. And of course new labour market entrants may be unemployed but not eligible for EI benefits.

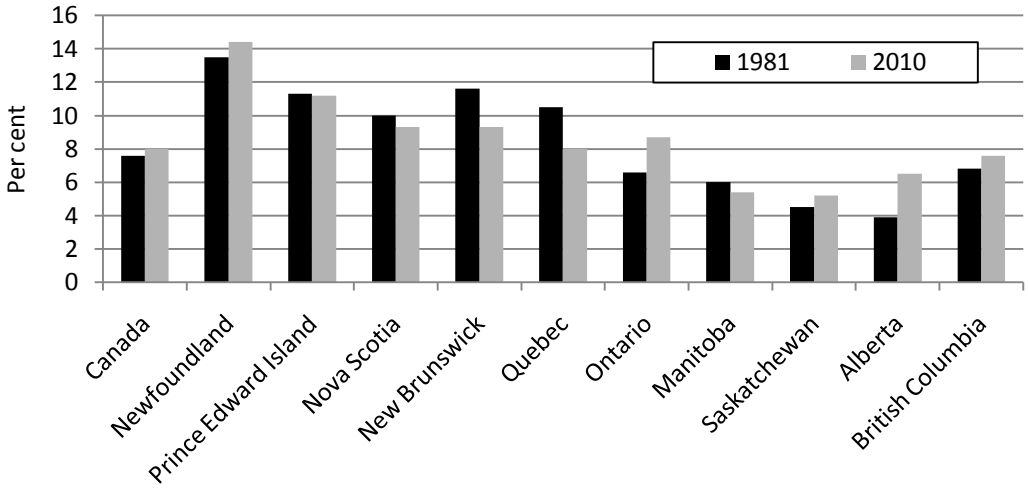
The aggregation procedure for the variables that make up the risk of unemployment component of the economic security domain is complicated. First, the EI coverage rate and the EI benefits rate are multiplied to obtain an index for the financial protection from unemployment. This index fell 26.8 per cent between 1981 and 2010 for Canada. Second, both the unemployment rate and the financial protection index are scaled. Third, the scaled values of the two indexes are weighted to produce the overall index of security from the risk imposed by unemployment. Since low unemployment provides employment security by the relative ease of obtaining employment, the unemployment rate is considered considerably more important than the EI system as a source of economic security for the working population. Consequently, it is given a weight of four-fifths in the aggregation of the overall index to reflect the disutility of unemployment *per se* (Di Tella, MacCulloch, and Oswald, 2003). A weight of one-fifth is given to the financial protection variable. This methodology represents a significant change from the earlier methodologies where the unemployment rate and EI system were weighted equally.

The greater weight given to the unemployment rate (relative to the EI variables) produces the result that the scaled value of economic security for risk of unemployment in Canada, at 0.593, is 0.034 points (or 5.4 per cent) lower in 2010 than in 1981.

b. Trends in the provinces

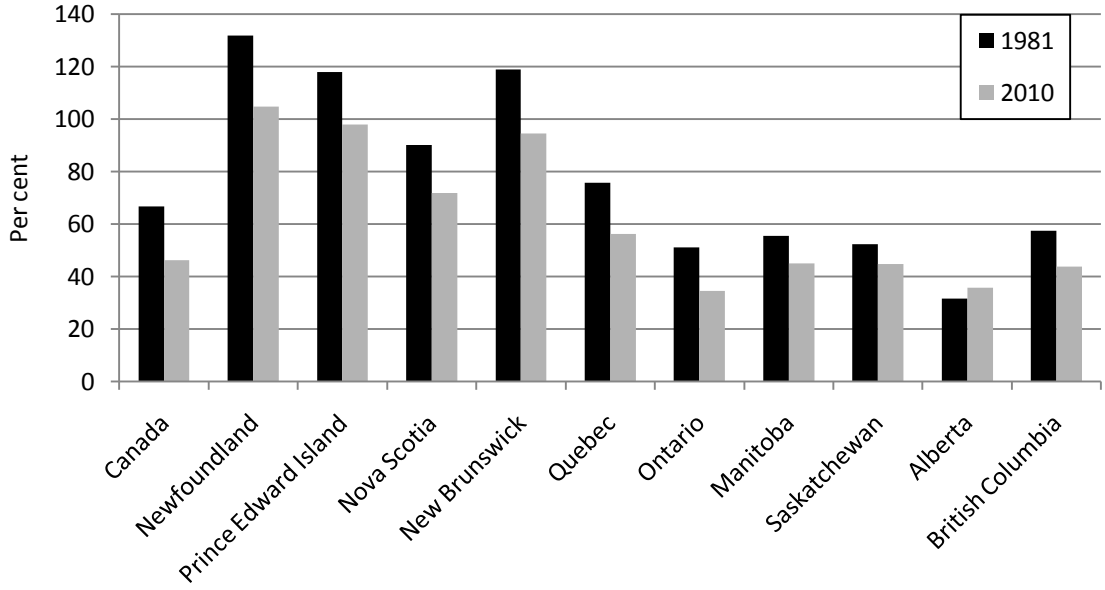
The Atlantic provinces had higher unemployment rates than the rest of Canada in 2010, led by Newfoundland with 14.4 per cent and Prince Edward Island with 11.2 per cent (Chart 34). The lowest rates were in Saskatchewan and Manitoba with 5.2 and 5.4 per cent, respectively. Over the 1981-2010 period, the provinces generally followed a pattern similar to the national one, with unemployment peaking in the early 1980s, mid-1990s, and 2009 (in most provinces). The highest rate over the entire period was 20.1 per cent found in Newfoundland in 1993, while the lowest rate was 3.4 per cent found in Alberta in 2006.

Chart 34: Unemployment Rate in Canada and the Provinces, 1981 and 2010, per cent



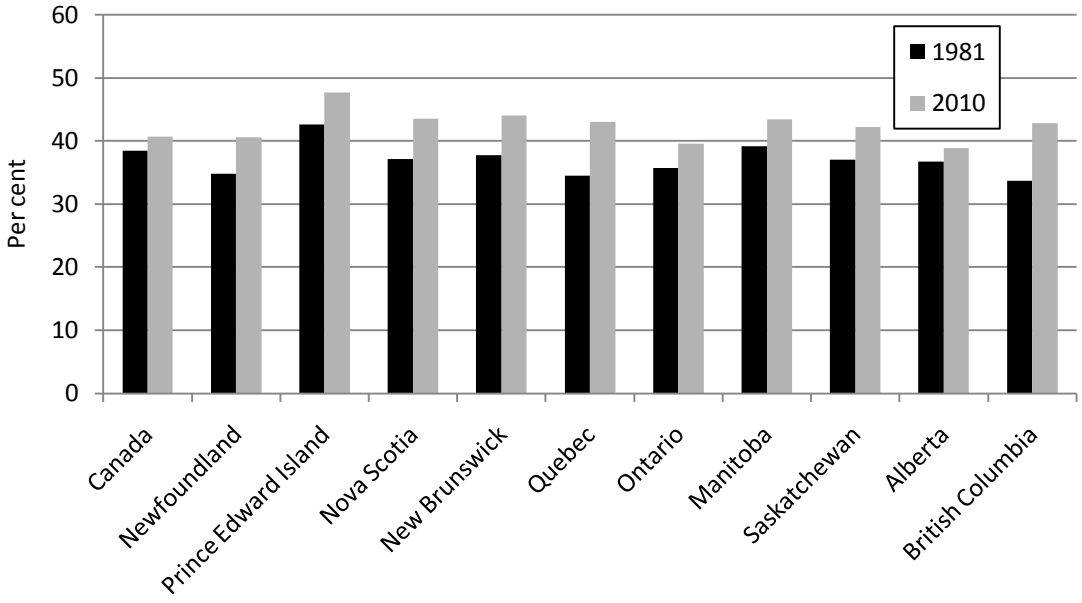
Source: Appendix Table 17

Chart 35: Employment Insurance Coverage Ratio, Canada and the Provinces, Per Cent, 1981 and 2010



Source: Appensix Table 18

Chart 36: Average Proportion of Earnings Replaced by EI Benefits, Canada and the Provinces, Per Cent, 1981 and 2010



Source: Appendix Table 19

The highest provincial EI coverage ratio in 2010 was 104.6 per cent in Newfoundland. This reflects the fact that EI recipients may outnumber those technically classified as unemployed (Footnote 29). The lowest coverage rate in 2010 was in Ontario, at 34.5 per cent. The large cross-province differences in the EI coverage ratios are a result of the structure of the EI system; the eligibility criteria for EI benefits, and the duration of those benefits, differ across regions of Canada depending on local labour market conditions. The EI system is more generous in regions of high unemployment, such as the Atlantic provinces, than in regions of low unemployment, such as Alberta.

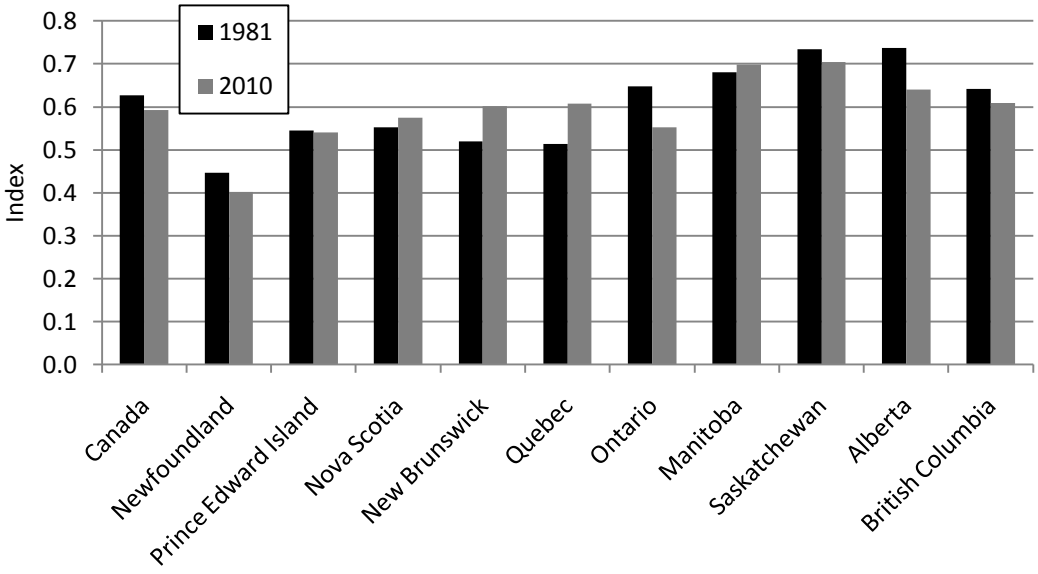
The EI coverage ratio declined in every province except Alberta over the 1981-2010 period. This increase in Alberta was largely due to the extremely low coverage rate in Alberta in 1981. Overall, the coverage ratio increased 0.44 per cent per year in Alberta. The largest decline was 1.39 per cent per year in Ontario.

There was much less variation across provinces in the EI replacement rate. The rate was highest in Prince Edward Island in 2010, at 47.7 per cent; Alberta's rate of 38.9 per cent was lowest among the provinces (Chart 36). The largest increase in the replacement rate over the period was the 27.2 per cent increase in British Columbia.

The scaled values of the index of security from unemployment were higher in 2010 than in 1981 for four of the ten provinces (Manitoba, Quebec, New Brunswick, and Nova Scotia). The largest decline was in Ontario, which experienced a drop of 14.8 per cent in its index. The highest scaled value in 2010 was in Saskatchewan, at 0.705, with Manitoba close behind at 0.698. The lowest value was found in Newfoundland at 0.402,

followed by Prince Edward Island at 0.540. Over the entire period, Quebec saw the most progress with 18.3 per cent growth in the index.

Chart 37: Overall Index of Security from the Risk Imposed by Unemployment, Canada and the Provinces, 1981 and 2010



Source: Appendix Table 20

ii. Financial Risk from Illness

The second component of the economic security domain is the financial risk imposed by illness. In Canada, health care deemed medically necessary is provided free of charge to all citizens through public medicare programs. In this sense the financial risk imposed by illness is much less than in countries without such universal coverage like the United States. But there is still significant private expenditure on health care in Canada and these expenditures have been rising rapidly. Included are spending for dental care, drugs taken outside hospitals, unlisted medical services such as acupuncture, and delisted medical services.[30] Also included are medically unnecessary procedures purchased by Canadians, such as plastic surgery.

a. Trends in Canada

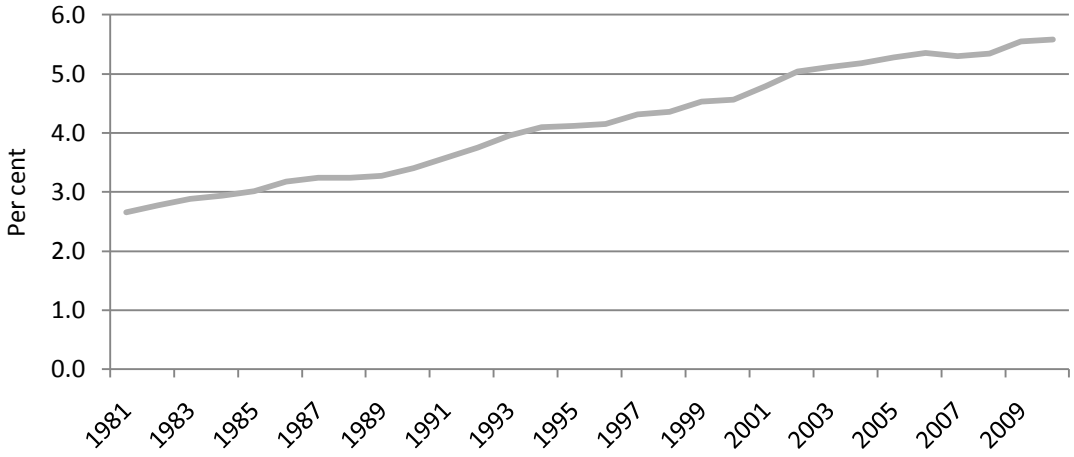
Private non-reimbursed expenditure on health care in Canada rose from $6.3 billion current dollars in 1981 to $56.6 billion in 2010. This represented more than a doubling of private health spending as a share of disposable income, from 2.65 per cent to 5.59 per cent (Appendix Table 21 and Chart 38).[31] This development can be

[30] Physiotherapy and vision care are examples of medical services that have been recently delisted in Ontario.

[31] Data on private health care expenditures are available to 2008. The 2009 and 2010 values are extrapolated using the compound annual growth rate from the 2003-2008 period.

considered a deterioration of the economic security of Canadians. Increased private health expenditure imposed by poor health thus represents a growing financial burden for low income Canadians. The growth rate of private health expenditures as a share of disposable income was fairly stable over the 1981-2010 period. The share grew 2.67 per cent per year over the 1981-1989 period, 3.05 per cent per year over the 1989-2000 period, and 2.00 per cent per year over the 2000-2008 period.

Chart 38: Private Medical Expenditures as a Proportion of Personal Disposable Income, Canada, Per Cent, 1981-2010



Source: Appendix Table 21

The scaled value of the 'risk imposed by illness' component of the economic security domain for Canada fell 0.528 points from 0.801 in 1981 to 0.273 in 2010 (Table 4). In terms of the index of the scaled values, this represented a 66.0 per cent decrease. As will be discussed later in the report, this development accounted for the entire decline in overall economic security domain.

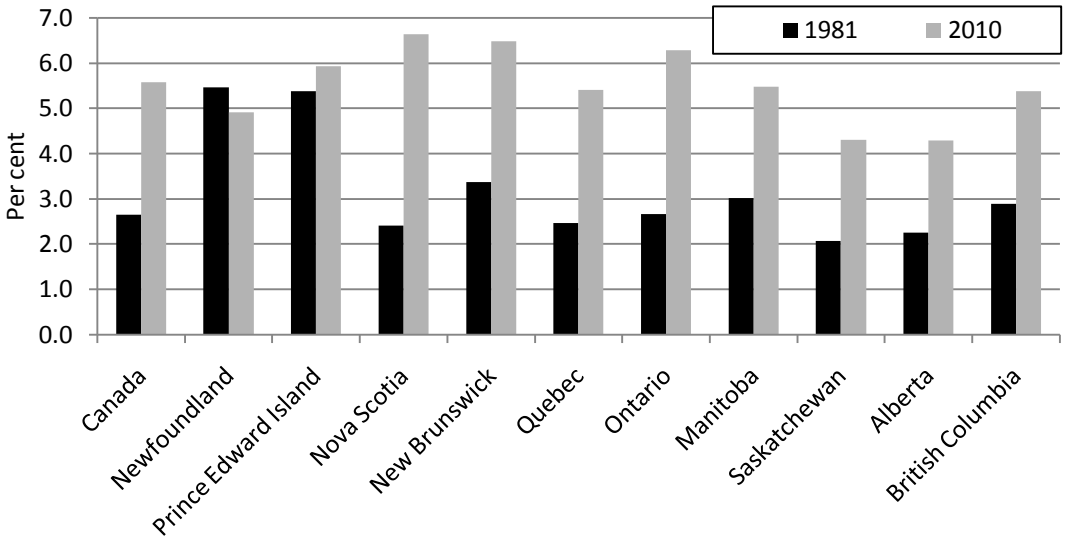
b. Trends in the provinces

Nova Scotia had the highest proportion of private health care spending to personal disposable income in 2010 with 6.64 per cent, followed by New Brunswick and Ontario (at 6.48 and 6.28 per cent). The lowest proportion was Alberta's 4.29 per cent. Since 1981, all provinces experienced positive growth in private health care spending as a share of disposable income with the exception of Newfoundland, which actually saw a decline of 10.1 per cent. Nova Scotia had the largest increase, at 175.3 per cent over the period, while several other provinces had growth in the 100 to 140 per cent range (Chart 39).

On the scaled value of the risk imposed by illness component of the economic security domain, Alberta had the highest level of security with 0.506 in 2010, followed closely by Saskatchewan with 0.503. Nova Scotia and New Brunswick had the lowest scores with 0.083 and 0.111, respectively. In Newfoundland, measured security from the financial risk of illness increased by only 33.7 per cent over the 1981-2010 period. All the other

provinces saw declines over the period, the worst of which also occurred in Nova Scotia and New Brunswick with 90.1 and 83.5 per cent decreases, respectively.

Chart 39: Private Expenditure on Healthcare as a Proportion of Personal Disposable Income, Canada and the Provinces, 1981 and 2010, per cent



Source: Appendix Table 21

iii. Risk from Single-Parent Poverty

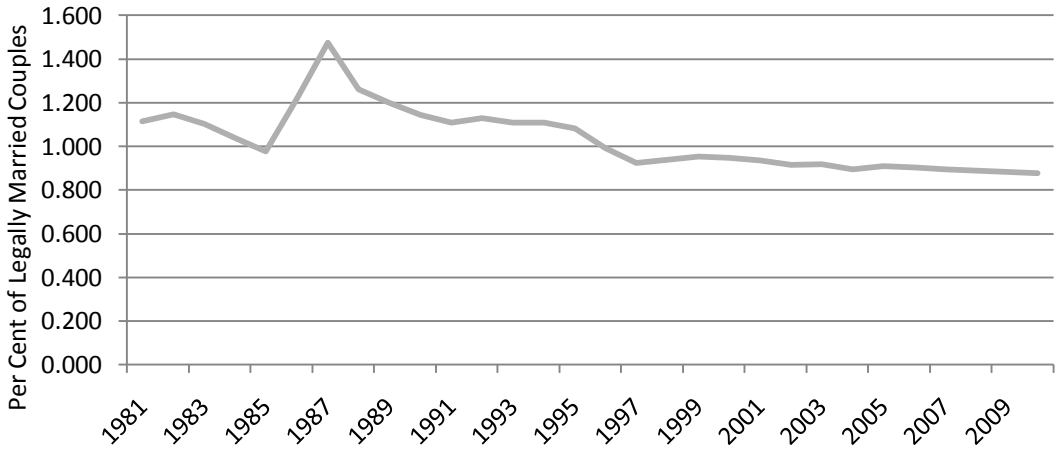
The third component of the economic security domain is the risk of single parent poverty. This component consists of three variables: the divorce rate (as divorce throws many people, especially women, into poverty), the poverty rate for lone parent families, and the poverty gap for these families. As in the equality domain, poverty is defined in terms of the LIMs produced by Statistics Canada. The poverty rate is the proportion of lone-parent families whose total after-tax incomes fall below fifty percent of the median equivalent income, and the poverty gap is the average difference between the poverty line and the incomes of those families.

a. Trends in Canada

The divorce rate for married couples, defined as the number of divorces divided by the number of married couples, was 0.88 per cent in Canada in 2010, the lowest rate in a quarter century (Appendix Table 23 and Chart 40).[32] The divorce rate rose from 1.12 per cent in 1981 to a peak of 1.47 per cent in 1987 and has since been on a downward trend reflecting possibly the aging of the population (the incidence of divorce declines after a certain number of years of marriage).

[32] The most recent year for which divorce data are available is 2005; values for subsequent years are extrapolated using the compound annual growth rate from the 2000-2005 period.

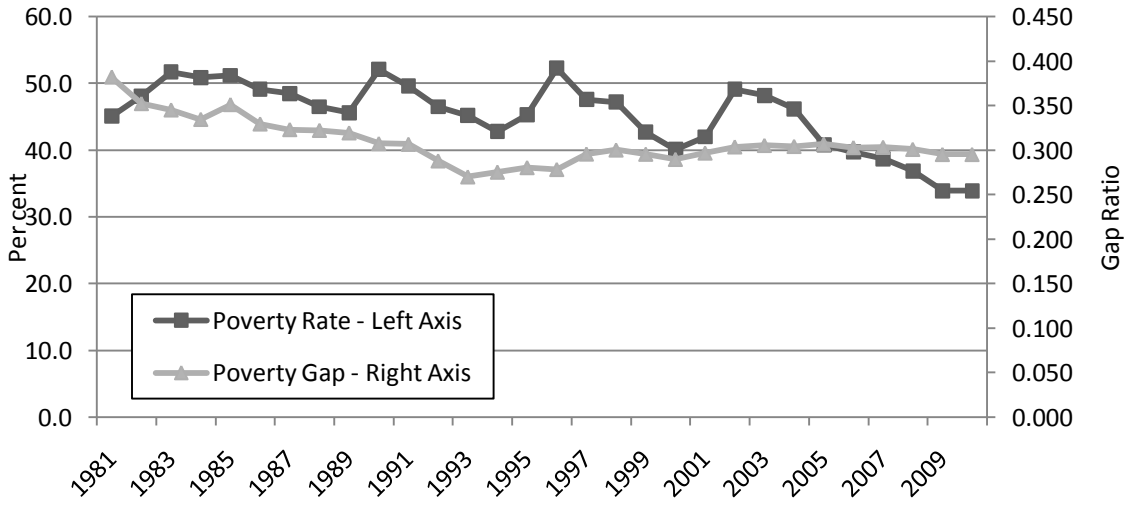
Chart 40: Divorce Rate, Canada, Per Cent of Legally Married Couples per Year, 1981-2010



Source: Appendix Table 23

It is well known that the poverty rate is particularly high for lone parent families. In 2010, this rate was 33.9 per cent in Canada (Appendix Table 24 and Chart 41).[33] This poverty rate was generally in the high forties in the period from 1981 to 1996. Since 1996, we have seen a general downward trend - from 52.3 per cent in 1996 to 33.9 per cent in 2010.

Chart 41: Poverty Rate and Poverty Gap for Single-parent Families, Canada, 1981-2010



Source: Appendix Tables 24 and 25

[33] Data on the single-parent poverty rate and poverty gap are available to 2007; the 2008 values are assumed to be equal to the 2007 values.

Like the poverty rate, the average single-parent poverty gap fell from 1981 to 2010 in Canada (Appendix Table 25 and Chart 41). The gap was 29.5 per cent in 2010, 22.8 per cent below its 1981 value of 38.2 per cent. Most of the decline occurred during the 1980s, when the average gap fell 2.21 per cent per year. The decline slowed to 0.88 per cent per year over the 1989-2000 period, and between 2000 and 2008, the gap increased 0.48 per cent per year.

The overall 'risk of single-parent poverty' component is calculated in a multiplicative manner as the product of the divorce rate, the poverty rate for single parents and poverty gap for single parents. This indicator for Canada fell 54.3 per cent over the 1981-2010 period. The index is then scaled. Canada's score in security from single-parent poverty was 0.739 in 2010, up 91.2 per cent from 0.387 in 1981 (Chart 45).

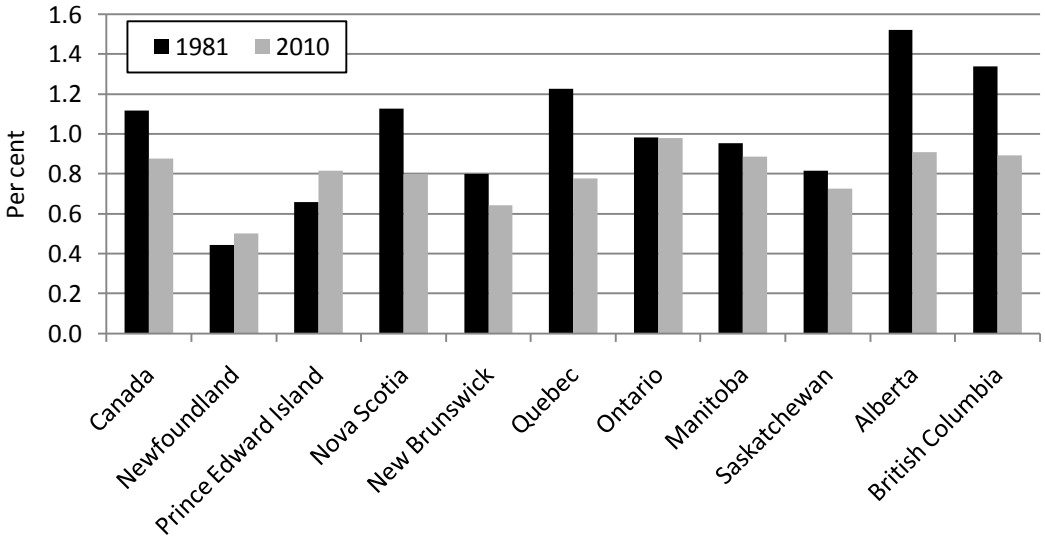
b. Trends in the provinces

Among the provinces, the highest divorce rate in 2010 was in Ontario, at 0.98 per cent, followed by Alberta at 0.91 per cent (Chart 42). The lowest rate was 0.50 per cent in Newfoundland. The divorce rate decreased over the 1981-2010 period in every province except for Newfoundland and Prince Edward Island; in those provinces, the rate increased by 13.3 and 24.4 per cent, respectively.

In 2010, the poverty rate for single-parent families ranged from a low of 27.4 per cent in Alberta to a high of 53.9 per cent in Manitoba (Chart 43). Every province experienced a considerable drop in the poverty rate in 2010 compared to the 1981 level except for Manitoba, where the poverty rate increased 9.1 per cent. The biggest drop occurred in British Columbia at 41.0 per cent.

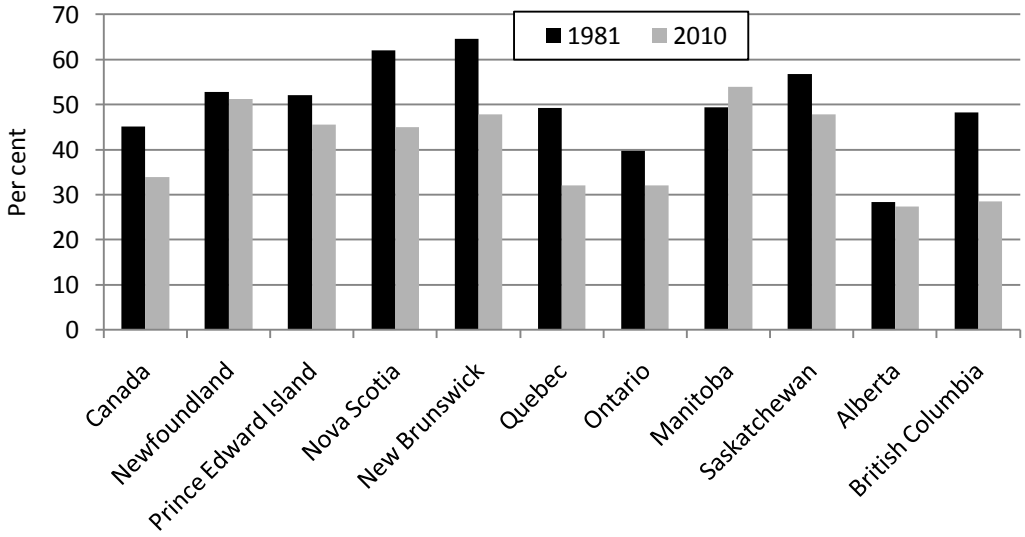
Alberta had the largest average poverty gap for single-parent families among the provinces in 2010 at 39.6 per cent, followed by Saskatchewan and British Columbia, at 38.4 per cent and 36.1 per cent, respectively (Chart 44). Newfoundland and New Brunswick had the lowest poverty gaps at 31.0 per cent and 31.7 per cent, respectively. Over the 1981-2010 period, Nova Scotia enjoyed the most significant drop in per cent terms at 50.4 per cent, while Saskatchewan and British Columbia were the only two provinces where the gap actually increased over the period (by 25.2 and 6.0 per cent, respectively).

Chart 42: Divorce Rate, Canada and the Provinces, Per Cent, 1981 and 2010



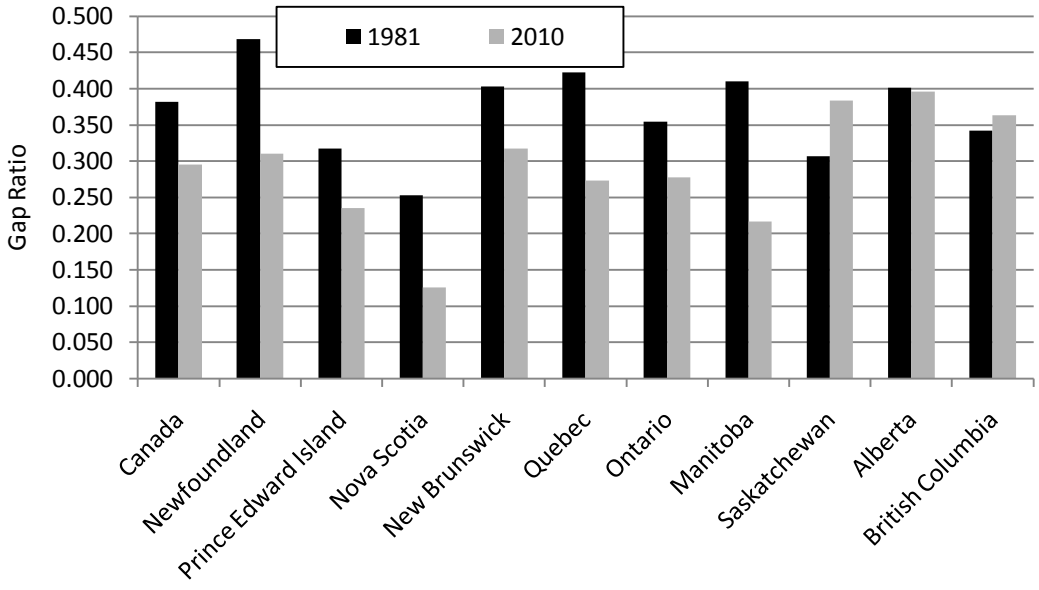
Source: Appendix Table 23

Chart 43: Poverty Rate among Single-Parent Families, Canada and the Provinces, Per Cent, 1981 and 2010



Source: Appendix Table 24

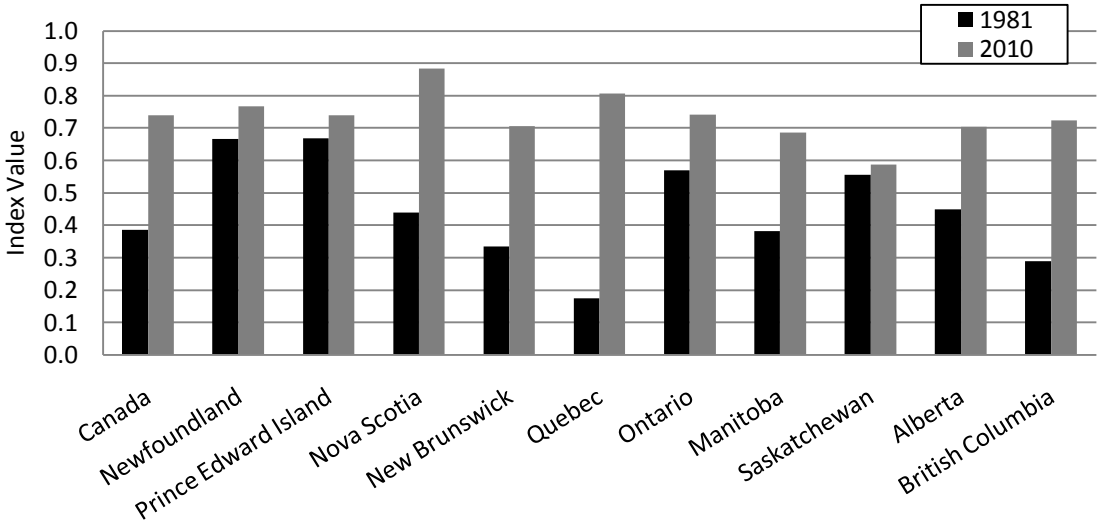
Chart 44: Average Poverty Gap among Single-Parent Families, Canada and the Provinces, 1981 and 2010



Source: Appendix Table 25

Nova Scotia had the highest score on the index of security from single-parent poverty in 2010, at 0.883 (Chart 45). Quebec was next, with a score of 0.806. Saskatchewan's score of 0.587 was lowest among the provinces. All the provinces experienced improvement in the index of security from the risk of single-parent poverty. The strongest improvement came from Quebec, with a 360.0 per cent gain, followed by British Columbia with a 151.1 per cent improvement. The smallest improvements came in Saskatchewan and Prince Edward Island with 5.5 and 10.6 per cent, respectively.

Chart 45: Overall Index of Security from Risk Imposed by Single Parent Poverty, Canada and the Provinces, 1981 and 2010



Source: Appendix Table 26

iv. Risk of Poverty in Old Age

The fourth component of the economic security domain is the risk of poverty in old age. This component is proxied by the poverty rate and poverty gap of families headed by persons 65 and over. Once again, these concepts are defined in terms of the LIMs calculated by Statistics Canada.

a. Trends in Canada

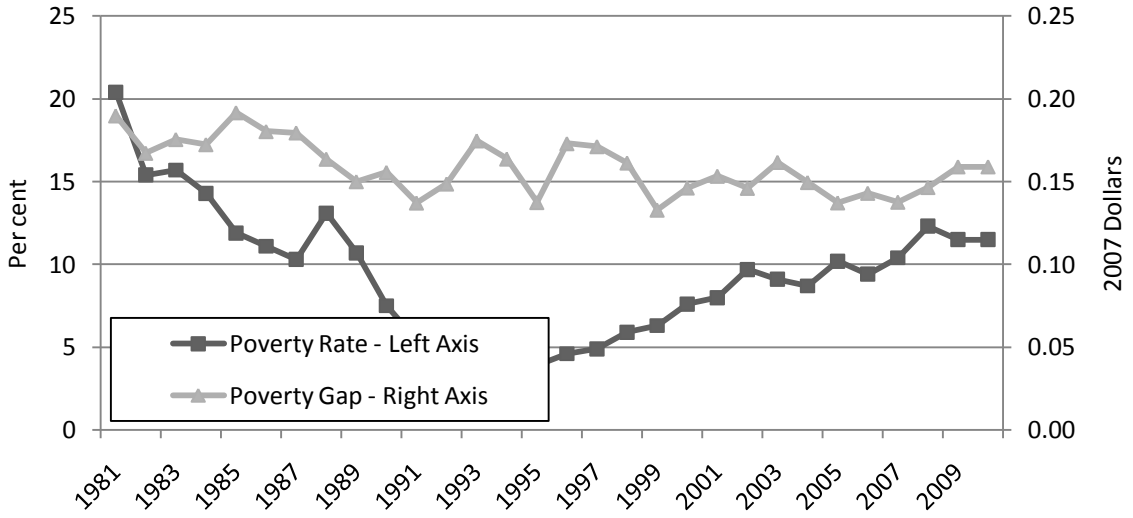
The poverty rate among elderly families in Canada was 11.5 per cent in 2010, down 43.6 per cent from 20.4 per cent in 1981 (Appendix Table 27 and Chart 46).[34] The poverty rate fell 7.75 per cent per year over the 1981-1989 period, and also declined at a rate of 3.06 per cent per year over 1989-2000. The downward trend reversed in the 2000-2008 period, as the elderly poverty rate increased at a rate of 6.20 per cent per year.

The elderly poverty gap followed a pattern similar to that of the elderly poverty rate. In Canada as a whole, the gap was 15.9 per cent in 2010, 16.2 per cent below the 1981 gap of 19.0 per cent (Appendix Table 28 and Chart 46). The annual rate of decrease declined over time from 2.90 per cent in the 1981-1989 period to 0.23 per cent in the 1989-2000 period. In the 2000-2008 period, the rate of change was positive, at 0.03 per cent per year.

The overall 'risk of poverty in old age' component is the scaled value of the elderly poverty intensity (the product of the poverty rate and the poverty gap). In Canada, elderly poverty intensity declined by 2.55 per cent per year over the 1981-2010 period. In scaled form, security from old-age poverty stood at 0.672 in 2010, up 95.0 per cent from its 1981 value of 0.345 (Appendix Table 29 and Chart 49).

[34] Data on the poverty rate and poverty gap among elderly families are available only to 2009; the 2010 values are assumed to be equal to the 2009 values.

Chart 46: Poverty Rate and Poverty Gap for Elderly Families, Canada, 1981-2010



Source: Appendix Tables 27 and 28

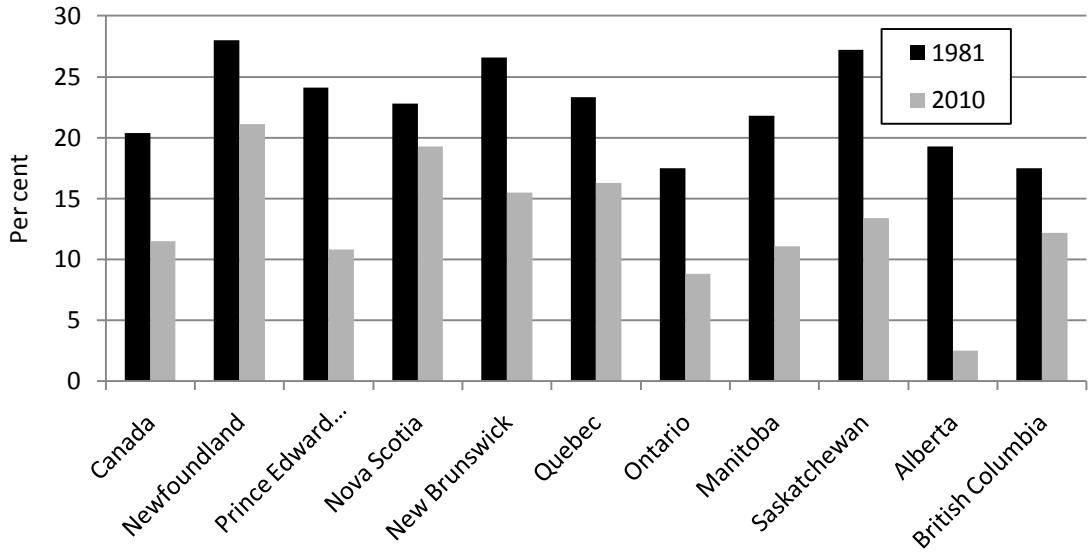
b. Trends in the provinces

Among the provinces, the highest elderly poverty rate in 2010 was Newfoundland's 21.1 per cent, followed by Nova Scotia's 19.3 per cent (Chart 47). The lowest rate was 2.5 per cent in Alberta. Over the 1981-2010 period, the elderly poverty rate fell significantly across the board. While Nova Scotia had the smallest drop at 15.4 per cent, most of the provinces had changes in excess of 30 per cent. Alberta enjoyed the largest drop, from 19.3 per cent in 1981 to 2.5 per cent in 2010, an 87.0 per cent change.

British Columbia had the highest elderly poverty gap in 2010 at 19.3 per cent (Chart 48). The lowest was Newfoundland's11.2 per cent. Every province saw a decrease in the elderly poverty gap over the 1981-2010 period. The largest decrease was in New Brunswick, where the gap fell 35.5 per cent from 19.1 per cent in 1981 to 12.3 per cent in 2010. The smallest decrease was in Ontario, where the poverty gap decreased by only 5.0 per cent, from 17.7 per cent in 1981 to 16.8 per cent in 2010.

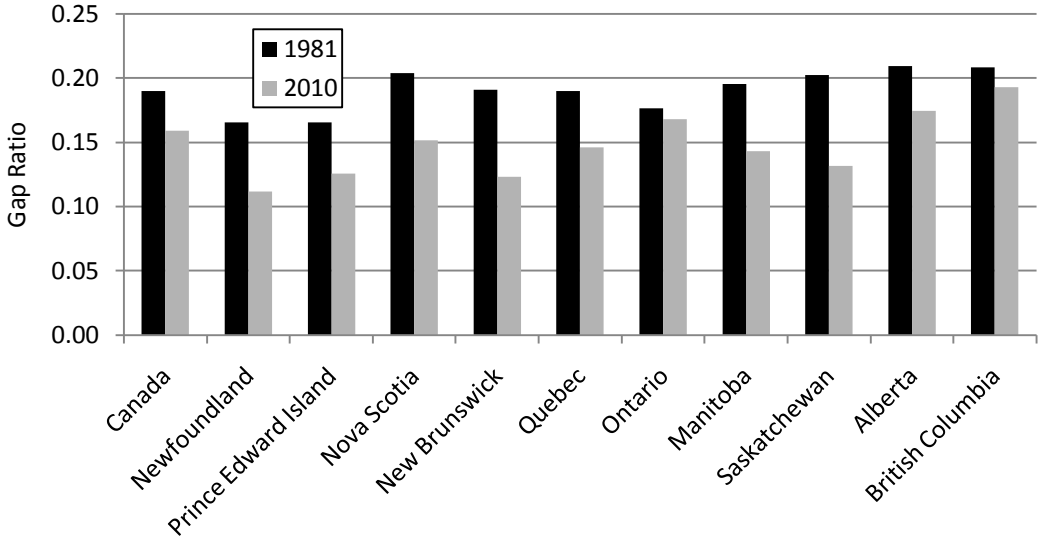
In 2010, Alberta had the highest index score for security from the risk of poverty in old age at 0.896, followed by Prince Edward Island at 0.748 (Chart 49). Nova Scotia had the lowest value at 0.496. Security from old-age poverty increased in every province over the 1981-2010 period, led by Saskatchewan's incredible 719.2 per cent increase. The next largest increase in security over the period was 335.6 per cent in New Brunswick.

Chart 47: Poverty Rate for Elderly Families, Canada and the Provinces, 1981 and 2010, per cent



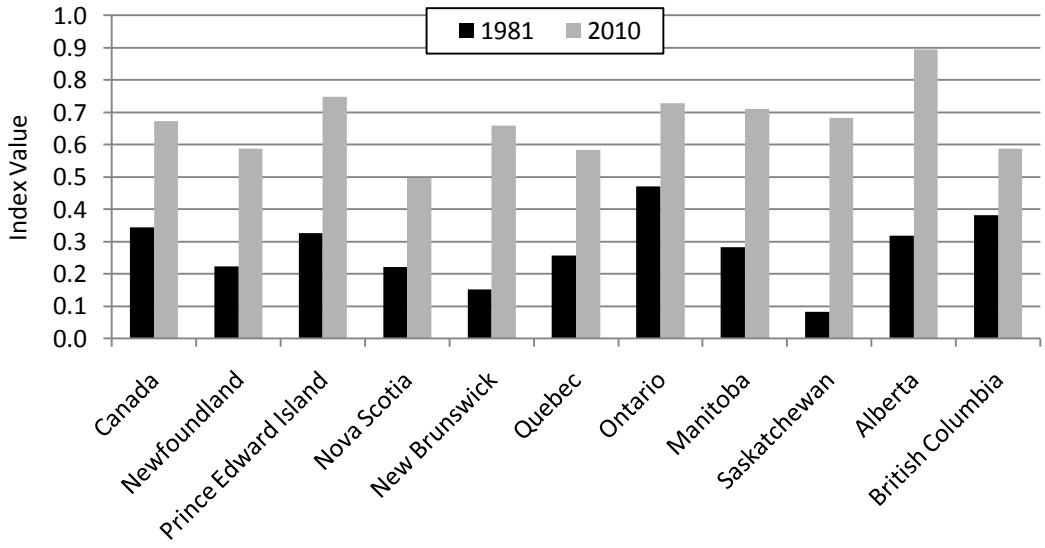
Source: Appendix Table 27

Chart 48: Average Poverty Gap for Elderly Families, Canada and the Provinces, 2007 Dollars, 1981 and 2010



Source: Appendix Table 28

Chart 49: Overall Index of Security from Risk Imposed by Poverty in Old Age, Canada and the Provinces, 1981 and 2010



Source: Appendix Table 29

v. Weighting of the Components in the Index of Economic Security Domain

The scaled values of the four components of the economic security domain are aggregated to obtain an overall scaled index for the domain. The weights used for this aggregation procedure are constructed from the relative sizes of the populations subject to each risk.

In terms of the risk of unemployment, it is assumed that the entire population aged 15 to 64 years is subject to this risk. In 2010, this was equivalent to 69.4 per cent of the total population in Canada (Appendix Table 30). In terms of the financial risk associated with illness, it is assumed that 100 per cent of the population is at risk. In terms of the risk of single parent poverty, it is assumed that all married women and their children who are under 18 are at risk. In 2010, this group represented 32.9 per cent of the Canadian population. In terms of the risk to poverty in old age, it is assumed that the population between the ages of 45 and 64 are most concerned about the risk of poverty in old age. This group represented 28.3 per cent of the Canadian population in 2010. The component-specific weights are generated by summing the four proportions of the population subject to the four risks and then standardizing to unity by dividing each proportion by that sum.

Because of demographic shifts, the proportion of the population affected by the different risks, and hence the weights, vary over time. With the aging of the Canadian population, the proportion of the population in the 15-64 age group has increased from 68.1 per cent in 1981 to 69.5 per cent in 2008 (but has since declined to 69.4 per cent in 2010), the proportion of the population aged 45-64 rose from 18.9 per cent to 28.3 per

cent, and the proportion of married women with children under 18 (and their children) fell from 45.3 per cent to 32.9 per cent.

The contribution of each component is the product of its scaled value and weight. For example, in Canada in 2010 the contribution of the risk of unemployment was 0.178 (0.593 *0.30); from the financial risk from illness, 0.118 (0.273*0.43); from the risk of single parent poverty, 0.106 (0.739*0.14); and from the risk of poverty in old age, 0.083 (0.672*0.12). Aggregating the contributions gives 0.485, which is the value of the overall economic security domain for Canada in 2010 (Table 6).

vi. Trends in the Economic Security Domain

a. Trends in Canada

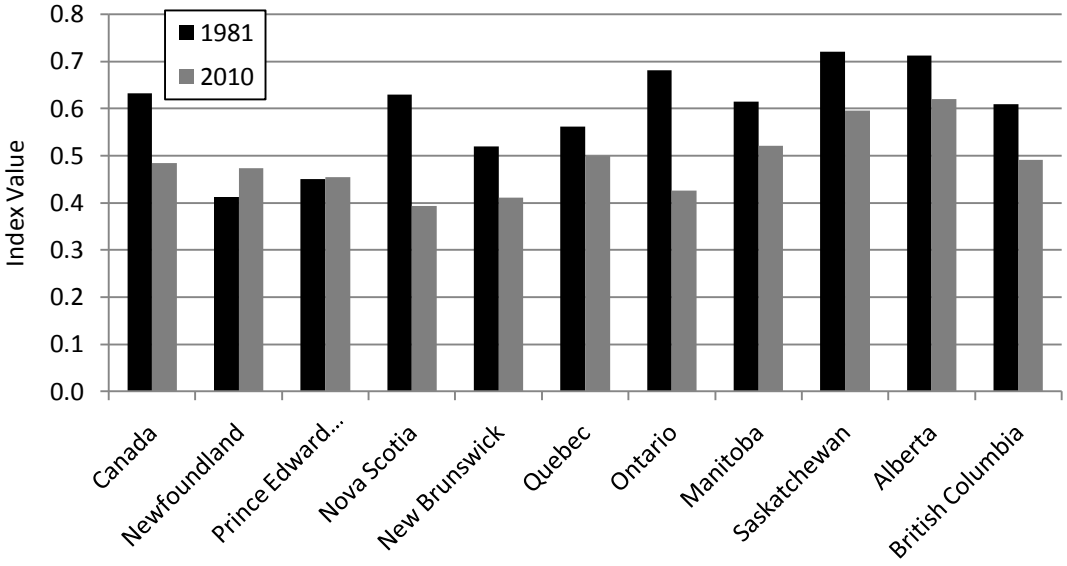
The overall index of economic security for Canada fell 0.147 points (or 23.3 per cent) from 0.632 in 1981 to 0.485 in 2010. The scaled values of two of the components of economic security increased between 1981 and 2010 –the risk from single parent poverty by 0.352 points and the risk of poverty in old age by 0.328 points. During the same period, the index from the financial risk from unemployment decreased by only .034 points. This means that almost the entire decline in overall economic security in Canada over the 1981-2010 period was driven by the decrease in security from the financial risk from illness, which fell by 0.528 points (or 66.0 per cent). The large weight assigned to this risk also contributed to its preponderant role in determining the evolution of the overall economic security domain.

As was noted earlier in the report, the fall in the security domain greatly dampened the overall upward trend in the Index of Economic Well-being arising from the increase in the consumption flows and stocks of wealth domains. This means that the more than doubling of the share of personal disposable income going to health care had, according to the Index of Economic Well-being, a major negative effect on economic well-being in Canada in the 1981-2010 period.

b. Trends in the provinces

Alberta and Saskatchewan were the provinces with the highest scores in the economic security domain in 2010; their scores were 0.620 and 0.596, respectively (Table 6 and Chart 50). Between 1981 and 2010, measured economic security declined in every province except Newfoundland and Prince Edward Island, where it increased 14.5 per cent and 0.7 per cent, respectively. The largest decline was 37.6 per cent in Nova Scotia. Newfoundland's increased economic security reflects the fact that it was the only province in which security from the financial risk of illness increased over the 1981-2010 period (Chart 39). The declines (or lack of significant growth in economic security in Prince Edward Island) in economic security in every other province were all driven by rising out-of-pocket expenditures on health care.

Chart 50: Index of the Security Domain in Canada and the Provinces, 1981 and 2010



Source: Table 6

III. Sensitivity Analysis

In this section, we explore the sensitivity of our results to the choice of the weights that are assigned to the four domains of well-being. In the literature, most composite indices assign equal weight to each component. The best known example is probably the Human Development Index, which assigns equal weight to sub-indices of education, health and access to resources (i.e. the log of GDP per capita). The main baseline results we report continue in this tradition, but there is no objective sense in which this weighting scheme is preferable to all others. The choice of weights is a value judgment, and the IEWB is designed to make that judgment as transparent as possible. There are defensible alternative weighting schemes, and we would like to know the robustness of our qualitative findings to changes in the weights.[35]

We compute the Index of Economic Well-being under three alternative weighting schemes. They are outlined in Exhibit 4. The baseline results are those reported earlier in this report, with each domain given equal weight. Alternative 1 keeps the weights for equality and security unchanged, but shifts weight from wealth stocks to consumption flows. This is reasonable if it is believed that people value current consumption more than accumulated stocks of wealth. Note that these were the weights that we used in the original estimates of the Index (Osberg and Sharpe, 1998). Although these weights do not exactly reflect the proportion of national income that Canadians collectively choose to invest rather than consume in a typical year, the implied 4:1 ratio of the value of consumption relative to savings is far closer than the 1:1 ratio in the baseline IEWB. Alternative 2 assigns zero weight to distributional concerns; the weight placed on both

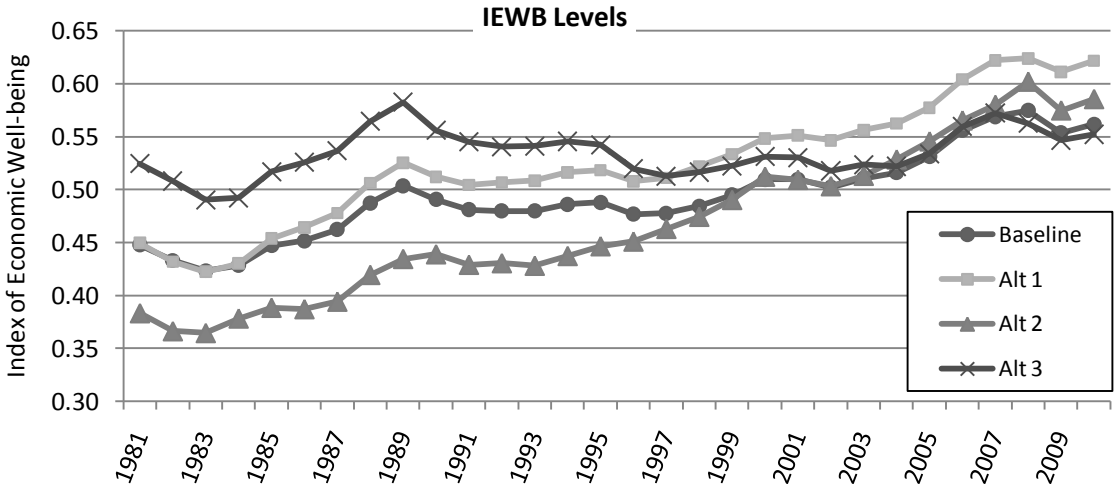
[35] Again, we invite readers to download the data tables in Microsoft Excel format at the CSLS web site (http://www.csls.ca/iwb.asp) and build versions of the Index of Economic Well-being with their own preferred weights.

inequality and poverty is set to zero.[36] Alternative 3 was recently used by the French business magazine *L'Expansion* (Dedieu, 2009). It assigns high weights to economic equality and security and lower weights to consumption and wealth.

Exhibit 4: Weighting Schemes for Sensitivity Analysis

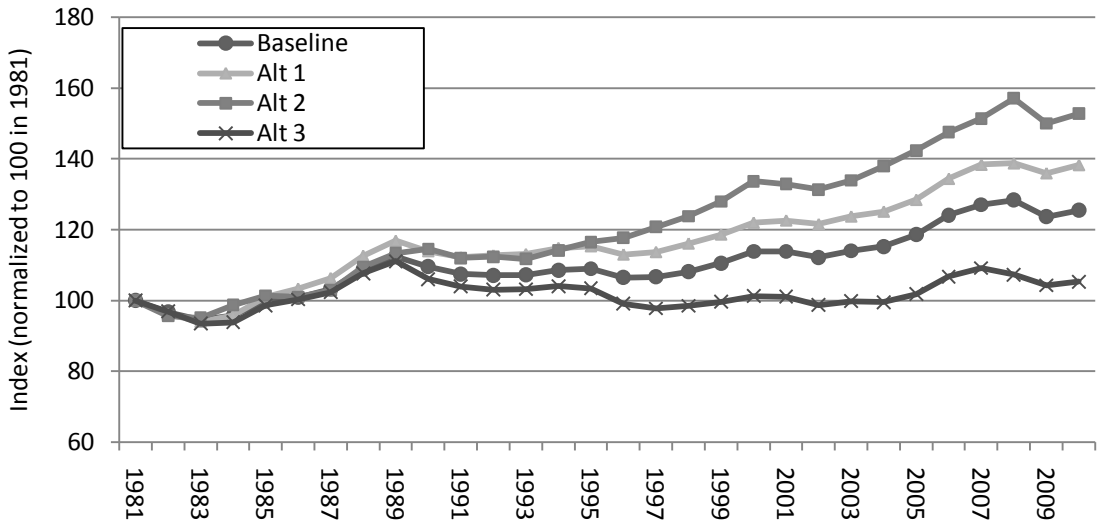
	Weights			
	Consumption	Wealth	Equality	Security
Baseline	0.25	0.25	0.25	0.25
Alternative 1	0.40	0.10	0.25	0.25
Alternative 2	0.33	0.33	0.00	0.33
Alternative 3	0.20	0.10	0.40	0.30

Chart 51: Index of Economic Well-being under Baseline and Alternative Weights



Source: Table 7 and Appendix Tables 31-33

[36] If it is thought to be 'left-wing' to emphasize distributional issues, then putting zero weight on such issues might be thought to be an extreme 'right-wing' perspective.



A. Alternative 1: Consumption Weighted More Heavily than Wealth

i. Trends in Canada

Under Alternative 1, the scaled value of the overall Index of Economic Well-being for Canada was 0.622 in 2010, up from 0.450 in 1981 (Chart 51 and Appendix Table 31). Recall that the baseline estimates for 1981 and 2010 were 0.448 and 0.562, respectively. Shifting weight from wealth to consumption raised the level of the Index in 2010 by 0.060 points (or 10.7 per cent), and increased the absolute growth of the Index over the 1981-2010 period from 0.114 points to 0.172 points. These changes reflect the fact that the consumption domain index experienced strong growth over the period and was substantially greater in value than the other domain indices in 2010 (Chart 5). Since consumption grew faster than wealth over the period (0.571 points versus 0.183 points), and since the scaled values of consumption for Canada exceed the scaled values of wealth (0.836 versus 0.436 in 2010),[37] it is unsurprising that shifting weight from the wealth domain to the current consumption domain increases both the value and the growth rate of the overall Index. The more one discounts wealth (i.e. future consumption) compared to present consumption (or, the greater is the evaluator's subjective rate of time preference), the more positively one will evaluate economic well-being over this period.

ii. Trends in the provinces

The change in weighting (that is, giving greater weight to consumption at the expense of wealth) has no effect on the ranking of provinces with the highest and lowest Index values in 2010. As before, Alberta had the highest 2010 overall Index value, at

[37] Note that the actual dollar value of per-capita wealth is larger than the dollar value of per-capita consumption flows. The reverse is true of the *scaled* values because of the linear scaling technique; the range of values for wealth is larger than the range of values for consumption because there is greater cross-provincial variation in wealth than in consumption per capita. This results in lower scaled wealth values than scaled consumption values for Canada.

0.746 (Table 7). This value is very close to the value of 0.733 and that was computed for Alberta under the baseline weighting scheme. Nova Scotia and New Brunswick remain the two provinces with the lowest Index values in 2010; their overall Index values were 0.584 and 0.560. In these cases, the change in weights does make a considerable impact on the magnitudes of the Index and switches the ranking of the two bottom countries; the baseline estimates were 0.499 and 0.502 for Nova Scotia and New Brunswick, respectively. This reflects the fact that Alberta has similar scaled values for consumption and wealth, whereas consumption is significantly larger than wealth (in scaled terms) in Nova Scotia and New Brunswick.

The ranking of the remaining provinces by IEWB level does change somewhat under the alternative weights (Exhibit 5). The most noteworthy change among these provinces is that Prince Edward Island's 2010 Index value increases from 0.568 to 0.638 when the weight on consumption is increased; this raises Prince Edward Island's ranking from fourth to second among all provinces in terms of overall well-being. Prince Edward Island's scaled consumption value is not as far below the Canadian average as its scaled wealth value. Therefore, shifting weight from wealth to consumption is beneficial to this province's measured well-being.

Exhibit 5: Ranking of Provinces According to Economic Well-being under Baseline and Alternative Weights

Level, 2010

	Baseline	Alternative 1	Alternative 2	Alternative 3
Highest well-being	Alberta	Alberta	Alberta	Alberta
	Newfoundland	Prince Edward Island	Newfoundland	Prince Edward Island
	Saskatchewan	Newfoundland	Saskatchewan	Saskatchewan
	Prince Edward Island	Saskatchewan	British Columbia	Manitoba
	Manitoba	Manitoba	Canada	Newfoundland
	Canada	Canada	Manitoba	Quebec
	Quebec	Ontario	Ontario	Canada
	British Columbia	Quebec	Quebec	Ontario
	Ontario	British Columbia	Nova Scotia	New Brunswick
	New Brunswick	Nova Scotia	New Brunswick	British Columbia
Lowest well-being	Nova Scotia	New Brunswick	Prince Edward Island	Nova Scotia

Growth Rate, 1981-2010

	Baseline	Alternative 1	Alternative 2	Alternative 3
Fastest IEWB growth	Newfoundland	Newfoundland	Newfoundland	Prince Edward Island
	Prince Edward	Prince Edward	Prince Edward	Newfoundland

	Island	Island	Island	
	New Brunswick	New Brunswick	New Brunswick	New Brunswick
	Saskatchewan	Manitoba	Quebec	Saskatchewan
	Manitoba	Quebec	Manitoba	Manitoba
	Quebec	Saskatchewan	Nova Scotia	Quebec
	Nova Scotia	Nova Scotia	Canada	Nova Scotia
	Canada	Canada	Saskatchewan	Alberta
	Alberta	Alberta	British Columbia	Canada
	Ontario	Ontario	Ontario	Ontario
Slowest IEWB growth	British Columbia	British Columbia	Alberta	British Columbia

Source: Table 7

Over the 1981-2010 period, every province experienced faster growth in measured well-being under Alternative 1 than under the baseline weighting scheme. This reflects the strong growth of consumption relative to wealth in every part of Canada. However, the differences in the growth of the baseline Index and the Alternative 1 Index are not large in magnitude. As noted above, the growth of the Index for Canada as a whole over the 1981-2010 period was 0.114 points under the baseline weights and 0.172 points under Alternative 1 – a difference of just 0.058 points in growth. At the provincial level, the largest difference in growth over the period was 0.071 points in Nova Scotia. In terms of cross-provincial comparisons, however, Alternative 1 changes almost nothing from the baseline results; the ranking of the provinces according to IEWB growth over the 1981-2010 period is very similar under both weighting schemes, with Newfoundland experiencing the fastest growth and British Columbia the slowest (Exhibit 5). Note that under both weighting schemes, New Brunswick, one of the provinces with the lowest Index levels in 2010was among the fastest-growing over the 1981-2010 period.

iii. Summary

Overall, the results are mostly robust to the change from the baseline weights to the Alternative 1 weights. Aside from the improvement in the measured well-being of residents of Prince Edward Island, the cross-provincial patterns are essentially the same under the two weighting schemes. A final noteworthy effect of the change is that the annual growth rate of the Index of Economic Well-being for Canada under the Alternative 1 weights is 1.12 per cent per year over 1981-2010, which is much closer to the annual growth rate of per-capita GDP (unscaled) over the period. The consumption domain is the main driver of the Index and consumption is itself a large component of GDP, so it is no surprise that placing greater weight on the consumption domain brings the Index more in line with per-capita GDP. This reinforces the idea that per-capita GDP growth can be a proximate indicator of growth in well-being *if* one places significant value on per-capita consumption relative to other dimensions of well-being. Or, put another way: the more one values things *other than* consumption, the less appropriate is per-capita GDP as an indicator of economic well-being.

B. Alternative 2: No Weight Given to Economic Equality

i. Trends in Canada

Under Alternative 2 it is assumed that inequality and poverty do not matter to average economic well-being; no weight at all is given to this domain and a weight of 0.33 is given to each of the remaining three domains. In 2010, this version of the overall Index took a value of 0.586 for Canada as a whole, up 0.202 points from 0.383 in 1981 (Chart 51 and Appendix Table 32). By comparison, the baseline Index increased by 0.114 points from 0.448 in 1981 to 0.562 in 2010. As before, the alternative weights lead to a greater measured improvement in well-being over the 1981-2010 period because the fast-growing consumption and wealth domains are more heavily weighted under Alternative 2 than under the baseline weights. However, Alternative 2 also places a greater weight on the economic security domain than the baseline weights do. Since the scaled index of economic security declined from 0.632 to 0.485 over the period, increasing that domain's weight from 0.25 to 0.33 amplifies its negative influence on measured well-being and partly offsets the positive impact of the higher consumption and wealth weights on the growth of the Index.

ii. Trends in the provinces

Alberta and Newfoundland remain the two provinces with the highest measured well-being under Alternative 2; their index values are 0.789 and 0.688, respectively. Note that the magnitude of Alberta's lead over Newfoundland has remained stable relative to the baseline Index at approximately 114.7 per cent (see Table 7 and Appendix Table 32). This reflects Alberta's particularly high score in the economic security domain, a result driven by its low unemployment risk and low poverty rates for female single parent families and elderly families, and Newfoundland's particularly low score in the economic equality. The combination of both of these effects causes the index in both provinces to increase at approximately the same rate.

At the bottom end, some baseline results are more sensitive to the change of weights. Prince Edward Island has the lowest measured well-being for 2010 under Alternative 2, at 0.496; under the baseline weights, Prince Edward Island ranked fourth out of the ten provinces. This result is due to the fact that Prince Edward Island's score in the economic equality domain (0.786 in 2010) is the highest in Canada, whereas the province is average or below-average in every other domain. In particular, Prince Edward Island's score in the wealth domain (0.285 in 2010) is the lowest in the country. Shifting all the weight from the economic equality domain to the other three domains therefore dramatically lowers Prince Edward Island's measured well-being.

That being said, New Brunswick and Nova Scotia remain near the bottom of the list in terms of measured well-being; their respective overall Index scores under Alternative 2 are 0.497 and 0.520, the second- and third-lowest among the provinces.

In every province, measured economic well-being grew faster under Alternative 2 as under the baseline weights over the 1981-2010 period. Newfoundland experienced the largest absolute change over the period under both weighting schemes – 0.360 points under the baseline and 0.464 points under Alternative 2. The largest difference in overall growth between the two weighting schemes is 0.104 points in Newfoundland. It should be noted that the absolute change in Prince Edward Island is larger under baseline weighting than under Alternative 2. This is due to the fact that Prince Edward Island has a larger index value in 1981 under the baseline weighting (0.293) than under the second alternative weighting scheme (0.243). For this reason, although the absolute change was larger under baseline weighting, the proportional growth was still more impressive under the alternative weighting.

iii. Summary

Overall, Alternative 2 changes the results (relative to the baseline weights) more than did Alternative 1, in ways that some might find a bit surprising. The exclusion of economic equality from the Index substantially decreases the measured well-being of Prince Edward Island. Most importantly, the compound annual growth rate of the overall Index for Canada over the 1981-2010 period was 1.47 per cent per year – higher than the growth rate of per-capita GDP over the same period (1.32 per cent per year). This reverses the baseline results, in which the growth rate of per-capita GDP exceeded that of the Index of Economic Well-being. The reversal is driven by the fact that placing less weight on one dimension of well-being implicitly requires placing more weight on other dimensions of well-being. Alternative 2 places greater weight on the fast-growing consumption and wealth domains at the expense of the economic equality domain, which had negative annual growth over the period. To a reader who does not consider income distribution and poverty to be important, these results suggest that the economic well-being of Canadians is improving even faster than per-capita GDP growth would imply.

C. Alternative 3: High Weights Given to Economic Equality and Security

i. Trends in Canada

As shown in Exhibit 4, Alternative 3 gives greater weights to economic equality (0.4) and security (0.3) than to consumption (0.2) and wealth (0.1). Under these weights, the value of the overall Index in 2010 was 0.552, up 0.028 points from 0.524 in 1981 (Chart 51 and Table 7). By comparison, the baseline Index increased by 0.114 points from 0.448 in 1981 to 0.562 in 2010.

It comes as no surprise that the 2010 Index value under Alternative 3 is substantially lower than the 2010 baseline value. The scaled index of economic equality declined from 0.642 to 0.490 between 1981 and 2010, and the index of the economic security domain declined from 0.632 to 0.485 over the same period. In contrast, the indices of the consumption and wealth domains both grew over the period, and in 2010

the index of the consumption domain had the largest value of any of the four domain indices at 0.836. Shifting weight away from consumption and wealth and toward equality and security therefore dampens the growth of the overall IEWB and leads to lower measured well-being. On the other hand, measured well-being in 1981 is higher under Alternative 3 than under baseline weighting. This is due to the high values of the scaled indices of security and equality and the low values of the scaled indices of consumption and wealth in 1981. This occurs due to the negative growth of equality and security over the 1981-2010 period and the positive growth of consumption and wealth over the same period. Therefore, this observation is not surprising.

For Canada as a whole, the compound annual growth rate of the overall Index under Alternative 3 was 0.18 per cent per year over the 1981-2010 period, well below the growth rates computed under the other weighting schemes and below the growth rates of per-capita GDP (1.32 per cent per year) and the baseline Index (0.78 per cent per year).

ii. Trends in the provinces

Alberta is once again the top province in terms of measured well-being, with an IEWB value of 0.678 under Alternative 3. Alberta's scores in the equality and security sub-indices are above the Canadian average, so deemphasizing the consumption and wealth components (where Alberta also has very high scores) does not affect its ranking relative to the other provinces. That being said, Alberta's overall Index values is lower in magnitude under Alternative 3 than under the baseline and the other Alternatives.

Nova Scotia maintains the lowest IEWB score for 2010 under Alternative 3, at 0.495. The next lowest is British Columbia, at 0.504. British Columbia is the province with the lowest score in the economic equality index by a substantial margin. Its score of 0.334 is 23.2 per cent below that of Nova Scotia (0.434), the next lowest. However, British Columbia does slightly better than Nova Scotia in terms of consumption (0.877 versus 0.867) and economic security (0.491 versus 0.393) and substantially better in the wealth domain. Nova Scotia ranks in the bottom three provinces in overall well-being under all four weighting schemes, and at the *very* bottom under two of them. Nova Scotia rates below the Canadian average in every domain of economic well-being except consumption.

In every province, the growth rate of the IEWB over the 1981-2010 period was lower under Alternative 3 than under the baseline. In two provinces, Ontario and British Columbia, Alternative 3 saw negative growth in the IEWB. This result is driven by the shift in weight away from fast-growing consumption and wealth and toward the equality and security domains, which have experienced negative growth in most parts of the country.

D. Overall Summary of Sensitivity Analysis

Value judgments regarding the importance of the different domains of economic well-being can matter, but in the alternative scenarios presented here, they have few

significant effects on the rankings of provinces according to the Index of Economic Well-being. The baseline IEWB results are fairly robust to the alternative weighting schemes we have examined. Under all four weighting alternatives, measured well-being is improving in all provinces, with the exception of Ontario and British Columbia under Alternative 3. It is improving most quickly in Newfoundland and Prince Edward Island under all four alternative weighting schemes. Alberta has the highest level of economic well-being for 2010, while Nova Scotia ranks among the bottom three provinces under all four alternative weighting schemes. As Chart 51 illustrates, the pattern of the Index over time is essentially the same under all the weighting schemes.

Some quantitative results are sensitive to the change of weights. In particular, the comparison between the IEWB and per-capita GDP is affected by the choice of weights. The growth gap between per-capita GDP and the IEWB over the 1981-2010 period is smaller when the consumption domain receives a larger weight. The fact that different weighting schemes affect trends in the overall index reflects the fact that the IEWB is designed so as to make it possible for different people to compute a composite index of overall well-being in accordance with their personal values. Individuals have the right to differ in their preferences over the dimensions of well-being, and it is natural that such differences should affect their assessment of measured well-being. Because the Index of Economic Well-Being accommodates such differences in a transparent way it enables observers to assess for themselves how much differing values matter for the perception of trends in economic well-being

IV. Recent Developments in the Index of Economic Well-being

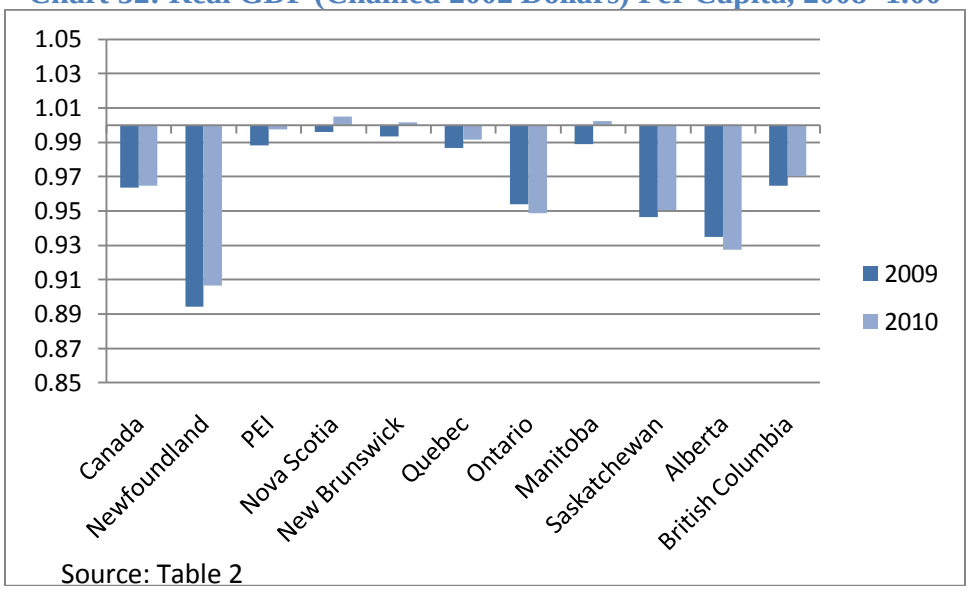
In 2008, Canada and much of the developed world underwent an economic recession. This caused both the real (chained 2002 dollars) GDP per capita and the IEWB estimate for Canadians to fall in 2009. GDP per capita fell to 96.37 per cent of its 2009 value and the IEWB estimate for Canada fell to 96.30 per cent of its 2009 value. These decreases in economic well-being were followed by slight increases in GDP and the IEWB. By 2010, GDP per capita had recovered only to 96.41 per cent of its 2008 value, while the Index of Economic Well-being returned to 97.70 per cent of its 2008 value. The IEWB has therefore recovered faster than real GDP.

The collapse of the IEWB for Canada is based mainly in the decline in wealth and economic security. Consumption, supported by government expenditure, continued to increase through the recession. Equality, dropping from 0.493 to 0.490, is relatively unchanged. Economic security fell from 0.521 in 2008 to 0.486 in 2009, while the largest drop occurred in wealth, which fell from 0.479 in 2008 to 0.427 in 2009. This collapse is based largely on the falling value of natural resources, increased public indebtedness, increased risk of illness (based on rising private health care expenditures), and increased risk of unemployment.

The recovery of the IEWB, although faster than the recovery of real GDP, has been slow. The consumption domain has continued to grow and wealth has recovered

slightly from its dramatic decline in 2009. The economic security domain continued to decline, although only slightly, into 2010.[38] The recovery in the IEWB at the national level is therefore completely based on increases in consumption and wealth.

Chart 52: Real GDP (Chained 2002 Dollars) Per Capita, 2008=1.00

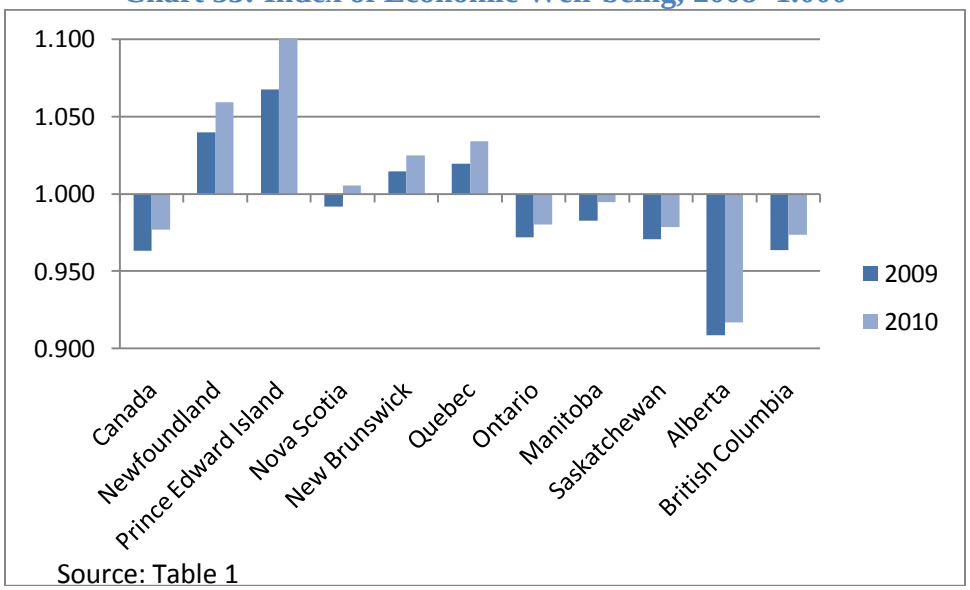


The response of the provinces to the recession has been varied. Only three provinces (Nova Scotia, New Brunswick, and Manitoba) have seen a complete recovery from the 2008 recession. We see in Exhibit 6 that these provinces have real GDP values in 2010 that exceed the value of real GDP in the province in 2008. Most other provinces have seen some recovery in real GDP. Only Alberta and Ontario have witnessed continued economic decline into 2010. The worst economic recession occurred in Newfoundland, where real GDP fell 10.6 per cent from 2008 to 2009 and had only recovered to 90.7 per cent of its 2008 value in 2010.

Interestingly, Newfoundland was one of only four provinces to experience an increase in the IEWB in 2009. Although GDP in all provinces in 2009, the estimate of the IEWB increased in Newfoundland, Prince Edward Island, New Brunswick, and Quebec. By 2010, all provinces were recovering from their decline in the IEWB; however, only five provinces obtained IEWB estimates above those achieved in 2008. These provinces included Nova Scotia and the four provinces that never experienced any decline in the IEWB. The steepest decline in the IEWB was witnessed by Alberta, where the IEWB fell 9.1 per cent in 2009. In 2010, the estimate of the IEWB had only recovered to 91.7 per cent its 2008 value.

[38] The influence of the equality domain on the recovery of the IEWB is not yet available, as 2009 data is used for 2010.

Chart 53: Index of Economic Well-being, 2008=1.000



These results stem largely from the performance of the provinces in the equality domain. All provinces witnessed increases in consumption from 2008 to 2010 due to increased government expenditure. Further, all provinces except Newfoundland and Prince Edward witnessed decreases in wealth due increased indebtedness and decreases in the value of natural resources.[39] The five provinces that have recovered from the decline in IEWB estimates in 2009 experienced increases in the their equality score from 2008 to 2010. On the other hand, all the other provinces (except Saskatchewan) witnessed a decline in equality over this period. Alberta, the province with the worst decline in the IEWB, experienced a complete collapse of the equality domain from 0.734 in 2008 to 0.563 in 2010. Given the equality domain is comprised of the Gini coefficient (25 per cent) and poverty intensity for the entire population (75 per cent), the decline and recovery of the IEWB over the 2008-2010 period is largely based on shifting poverty intensity.[40]

Overall, the pace of recovery in the IEWB is faster than the recovery of real GDP. Only in Alberta and Manitoba did the IEWB recover slower than real GDP. In Manitoba, this is explained by the rapid recovery of real GDP, which in 2010 exceeded its 2008 level. In Alberta, this is explained by the dismal recovery of the IEWB, which in 2010 was 91.7 per cent of its 2008 value. In the other eight provinces, the recovery of the IEWB outpaced the recovery of real GDP.

[39] Natural resource wealth per capita in Newfoundland increased from 2008 to 2010. In Prince Edward Island, the decreases in natural resource wealth and increases in indebtedness were offset by large increases in human capital wealth.

[40] The differing dynamics at the national and provincial levels can be explained by the fact that national performance is a weighted average of provincial performances. Given all provinces experienced increases in consumption and most provinces experienced decreases in wealth, these components cannot possibly be the major factor in variation between provinces despite their influence on the recession in general.

V. Conclusion

This report presents revised and updated estimates of the Index of Economic Well-being for Canada and the provinces for the 1981-2010 period based on what we believe are methodological improvements to the Index. The results show that since 1981, and more particularly since 1997, the economic well-being of Canadians has improved considerably. The overall Index of Economic Well-being rose 0.114 points from 0.448 in 1981 to 0.562 in 2010 in Canada. This amounts to a 25.4 per cent total increase over the period, or a compound growth rate of 0.78 per cent per year.

The increase in well-being was driven by robust growth in consumption and stocks of wealth. The index of the consumption domain increased 4.04 per cent per year over the 1981-2010 period, while the index of the wealth domain grew 1.90 per cent per year.

However, the growth of economic well-being was hindered by declines in economic equality and security. The index of the economic equality domain fell by 0.152 points (or 23.6 per cent) over the 1981-2010 period, driven by rising income inequality. The index of the economic security domain declined by 0.147 points (or 23.3 per cent) over the same period, largely as a result of rising out-of-pocket healthcare expenditures. In Canada, the proportion of personal disposable income being spent on healthcare increased from 2.65 per cent in 1981 to 5.59 per cent in 2010.

Among the provinces, Alberta and Newfoundland had the highest levels of economic well-being in 2010. Nova Scotia and New Brunswick had the lowest levels. Economic well-being increased in every province over the 1981-2010 period, driven by rising consumption and wealth. As in the case of Canada as a whole, however, growth in economic well-being was held back by declining economic security.

Sensitivity analysis shows that our key baseline results are fairly robust to the use of different weights for the four domains. Under all four weighting alternatives we examine, economic well-being improved in Canada and in all provinces over the 1981-2010 period, with the exception of Ontario and British Columbia under Alternative 3. It improved most quickly in Newfoundland. Alberta always had the highest level of economic well-being in 2010, while Nova Scotia ranked in the bottom three provinces under all of the four alternative weighting schemes.

The recent recession cause declines in both the real GDP per capita and the IEWB of Canada. In 2009, real GDP per capita fell to 96.4 per cent of its 2008 value and recovered only to 96.5 per cent of this value by 2010. The IEWB estimate also fell - to 96.3 per cent of its 2008 value - in 2009. The recovery of the IEWB outpaced the recovery of real GDP in Canada, and was at 97.7 per cent of its 2008 value by 2010. The decline in the IEWB was based on falling estimates of wealth and economic security in Canada. Consumption continued to rise. Whereas the recovery has seen an increase in

wealth, the slow pace of this recovery can be attributed to stagnation in economic security.

The recent recession also caused declines in the real GDP per capita of all provinces and declines in the IEWB for six of the ten provinces. In all provinces except Manitoba and Alberta, the recovery of the IEWB has outpaced the recovery of real GDP. In Alberta, this was caused by the poor performance under the IEWB, whereas in Manitoba, this was based on the spectacular performance of real GDP growth. In five provinces - Newfoundland, Prince Edward Island, Nova Scotia, New Brunswick, and Quebec - the estimates of the IEWB have completely recovered. On the other hand, real GDP has only recovered in Nova Scotia, New Brunswick, and Manitoba. The recovery of provinces is linked to performance in economic equality.

The Index remains a work in progress. It will undoubtedly undergo further modifications as research on the conceptualization of economic-well-being, and ways to capture these concepts empirically, evolves. The Index captures more aspects of economic well-being than does real GDP, and is therefore a step in the right direction.

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Table 1: Overall Index of Economic Well-being, Canada and the Provinces, 1981-2010

	Canada	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia
1981	0.448	0.279	0.293	0.381	0.281	0.387	0.480	0.389	0.420	0.602	0.487
1982	0.433	0.270	0.336	0.382	0.275	0.386	0.458	0.404	0.458	0.579	0.434
1983	0.423	0.213	0.359	0.389	0.243	0.395	0.432	0.397	0.454	0.545	0.451
1984	0.428	0.274	0.369	0.392	0.295	0.393	0.455	0.428	0.417	0.529	0.417
1985	0.447	0.270	0.383	0.395	0.344	0.415	0.479	0.445	0.389	0.583	0.409
1986	0.452	0.317	0.413	0.393	0.370	0.414	0.494	0.441	0.369	0.545	0.440
1987	0.462	0.315	0.412	0.422	0.358	0.420	0.515	0.461	0.428	0.525	0.449
1988	0.487	0.381	0.441	0.455	0.404	0.448	0.529	0.476	0.425	0.541	0.510
1989	0.504	0.412	0.432	0.456	0.414	0.462	0.552	0.487	0.434	0.533	0.522
1990	0.491	0.372	0.461	0.472	0.417	0.450	0.531	0.470	0.408	0.554	0.496
1991	0.481	0.361	0.432	0.464	0.409	0.440	0.512	0.474	0.413	0.526	0.524
1992	0.480	0.333	0.457	0.462	0.401	0.451	0.516	0.457	0.413	0.492	0.509
1993	0.480	0.358	0.454	0.456	0.401	0.434	0.516	0.461	0.434	0.524	0.513
1994	0.486	0.364	0.462	0.436	0.386	0.442	0.521	0.464	0.443	0.536	0.522
1995	0.488	0.359	0.435	0.451	0.418	0.436	0.522	0.504	0.438	0.539	0.527
1996	0.477	0.358	0.432	0.428	0.429	0.449	0.492	0.481	0.457	0.539	0.508
1997	0.478	0.386	0.433	0.418	0.413	0.436	0.499	0.480	0.496	0.545	0.507
1998	0.484	0.382	0.451	0.418	0.431	0.461	0.510	0.480	0.488	0.542	0.489
1999	0.495	0.392	0.416	0.459	0.441	0.478	0.513	0.466	0.509	0.577	0.492
2000	0.510	0.417	0.429	0.468	0.456	0.475	0.530	0.478	0.493	0.621	0.514
2001	0.510	0.454	0.434	0.463	0.442	0.484	0.529	0.489	0.512	0.622	0.490
2002	0.502	0.438	0.466	0.458	0.431	0.486	0.513	0.483	0.508	0.636	0.470
2003	0.511	0.439	0.481	0.456	0.419	0.499	0.526	0.499	0.519	0.615	0.482
2004	0.516	0.444	0.489	0.475	0.442	0.522	0.510	0.506	0.508	0.630	0.500
2005	0.531	0.519	0.527	0.501	0.435	0.507	0.524	0.500	0.487	0.692	0.534
2006	0.556	0.560	0.515	0.508	0.454	0.535	0.544	0.523	0.513	0.740	0.547
2007	0.569	0.593	0.548	0.506	0.475	0.539	0.559	0.535	0.571	0.732	0.578
2008	0.575	0.603	0.517	0.496	0.490	0.532	0.549	0.565	0.631	0.799	0.559
2009	0.554	0.627	0.552	0.492	0.497	0.542	0.533	0.556	0.613	0.726	0.538
2010	0.562	0.639	0.568	0.499	0.502	0.550	0.538	0.562	0.618	0.733	0.544
Absolute Change in Points											
81-10	0.114	0.360	0.275	0.118	0.221	0.163	0.058	0.174	0.198	0.131	0.057
81-89	0.056	0.133	0.140	0.075	0.133	0.075	0.072	0.098	0.014	-0.069	0.035
89-00	0.006	0.005	-0.003	0.012	0.042	0.013	-0.022	-0.009	0.059	0.088	-0.008
00-08	0.065	0.186	0.087	0.029	0.034	0.056	0.019	0.087	0.139	0.178	0.044
Per cent Change											
81-10	25.4	129.3	94.0	31.0	78.6	42.2	12.1	44.7	47.0	21.7	11.7
81-89	12.5	47.9	47.6	19.7	47.1	19.5	15.0	25.3	3.3	-11.5	7.2
89-00	1.2	1.2	-0.7	2.6	10.2	2.9	-3.9	-1.8	13.5	16.6	-1.5
00-08	12.8	44.6	20.4	6.1	7.5	11.9	3.5	18.3	28.1	28.7	8.6
Compound Annual Growth Rate											
81-10	0.78	2.90	2.31	0.94	2.02	1.22	0.39	1.28	1.34	0.68	0.38
81-89	1.48	5.02	4.99	2.27	4.94	2.25	1.76	2.86	0.41	-1.52	0.87
89-00	0.11	0.11	-0.07	0.23	0.89	0.26	-0.36	-0.16	1.16	1.40	-0.14
00-08	1.52	4.72	2.35	0.75	0.91	1.41	0.44	2.12	3.15	3.20	1.04

Source: CSLS Database of the IEWB for Canada and the Provinces - Table 9

Table 2: Per-capita GDP, Canada and the Provinces, $2002, 1981-2010

	Canada	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia
1981	26,081	16,278	17,094	18,687	17,131	23,706	28,533	23,784	23,970	35,786	29,889
1982	25,036	16,483	17,243	19,290	17,429	22,735	27,426	22,943	23,265	33,497	27,576
1983	25,463	16,843	18,649	19,558	18,454	23,080	28,279	22,790	23,587	32,773	27,454
1984	26,690	17,281	18,852	20,563	18,697	23,973	30,096	24,392	23,752	34,162	27,294
1985	27,712	17,541	18,634	21,358	19,194	24,617	30,921	25,714	24,128	36,736	28,915
1986	28,102	17,643	19,317	21,708	20,470	24,948	31,696	25,557	25,414	35,488	28,694
1987	28,914	18,283	19,574	22,308	21,468	25,742	32,590	25,780	25,425	36,108	30,014
1988	29,961	19,430	20,110	22,486	21,520	26,700	33,642	25,556	24,666	38,742	31,086
1989	30,199	20,203	20,514	22,828	21,580	26,518	33,864	26,197	25,482	38,635	31,284
1990	29,804	20,199	20,605	22,600	21,309	26,339	32,657	26,803	27,580	38,733	30,803
1991	28,820	20,211	20,557	22,296	21,153	25,373	30,965	25,806	28,022	38,255	30,112
1992	28,731	19,895	21,043	22,499	21,423	25,326	30,830	26,003	26,912	38,017	30,044
1993	29,081	20,061	21,070	22,605	22,019	25,663	30,782	25,982	28,600	40,215	30,516
1994	30,146	21,127	21,898	22,627	22,444	26,663	32,212	26,861	29,762	42,191	30,452
1995	30,674	21,874	23,122	22,974	23,150	27,012	32,948	26,793	29,957	42,976	30,344
1996	30,846	21,145	23,582	23,036	23,275	27,175	32,912	27,493	30,686	43,207	30,313
1997	31,832	21,744	23,609	23,998	23,537	27,940	33,955	28,468	31,915	45,238	30,689
1998	32,862	23,398	24,742	24,908	24,464	28,744	35,163	29,641	33,291	46,480	30,822
1999	34,399	24,981	25,697	26,218	25,990	30,412	37,350	29,978	33,450	46,264	31,587
2000	35,864	26,541	26,160	27,022	26,538	31,586	38,965	31,123	34,559	48,228	32,823
2001	36,112	27,265	25,845	27,922	27,004	31,885	38,948	31,262	34,479	48,199	32,727
2002	36,771	31,677	27,039	28,964	28,251	32,448	39,514	31,609	34,453	48,138	33,721
2003	37,124	33,594	27,532	29,295	29,044	32,651	39,563	31,843	36,048	48,803	34,309
2004	37,922	33,258	28,161	29,498	29,846	33,311	40,093	32,262	37,838	50,491	35,267
2005	38,697	34,203	28,402	29,870	30,266	33,706	40,748	32,980	39,155	51,433	36,573
2006	39,386	35,525	29,561	30,036	31,078	34,073	41,294	33,936	38,570	52,861	37,640
2007	39,820	39,083	30,030	30,574	31,440	34,548	41,682	34,571	39,616	52,384	38,169
2008	39,562	39,878	29,861	30,925	31,319	34,627	40,877	34,887	40,870	51,938	37,608
2009	38,126	35,657	29,512	30,806	31,113	34,168	38,992	34,502	38,683	48,553	36,287
2010	38,167	36,158	29,789	31,075	31,373	34,342	38,775	34,968	38,855	48,174	36,495
Absolute Change in Points											
81-10	12,086	19,879	12,695	12,388	14,242	10,636	10,241	11,184	14,885	12,388	6,606
81-89	4,118	3,924	3,420	4,141	4,449	2,811	5,330	2,413	1,512	2,849	1,396
89-00	5,665	6,339	5,645	4,194	4,958	5,069	5,101	4,926	9,077	9,593	1,538
00-08	3,698	13,337	3,702	3,903	4,781	3,041	1,913	3,764	6,312	3,710	4,786
Per cent Change											
81-10	46.3	122.1	74.3	66.3	83.1	44.9	35.9	47.0	62.1	34.6	22.1
81-89	15.8	24.1	20.0	22.2	26.0	11.9	18.7	10.1	6.3	8.0	4.7
89-00	18.8	31.4	27.5	18.4	23.0	19.1	15.1	18.8	35.6	24.8	4.9
00-08	10.3	50.2	14.2	14.4	18.0	9.6	4.9	12.1	18.3	7.7	14.6
Compound Annual Growth Rate											
81-10	1.32	2.79	1.93	1.77	2.11	1.29	1.06	1.34	1.68	1.03	0.69
81-89	1.85	2.74	2.31	2.53	2.93	1.41	2.16	1.22	0.77	0.96	0.57
89-00	1.58	2.51	2.23	1.55	1.90	1.60	1.28	1.58	2.81	2.04	0.44
00-08	1.23	5.22	1.67	1.70	2.09	1.16	0.60	1.44	2.12	0.93	1.72

Source: CSLS Database of the IEWB for Canada and the Provinces - Appendix Table 30

Table 3: Index of the Consumption Domain, Canada and the Provinces, 1981-2010

	Canada	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia
1981	0.265	0.083	0.195	0.230	0.097	0.188	0.278	0.214	0.239	0.401	0.368
1982	0.245	0.087	0.180	0.217	0.112	0.169	0.260	0.230	0.218	0.375	0.315
1983	0.254	0.101	0.189	0.219	0.132	0.187	0.271	0.238	0.221	0.378	0.310
1984	0.274	0.132	0.222	0.261	0.162	0.215	0.292	0.287	0.227	0.376	0.306
1985	0.303	0.160	0.232	0.294	0.205	0.248	0.320	0.322	0.233	0.411	0.321
1986	0.326	0.194	0.239	0.322	0.242	0.276	0.345	0.354	0.256	0.413	0.329
1987	0.352	0.214	0.287	0.349	0.266	0.289	0.378	0.366	0.270	0.440	0.368
1988	0.382	0.252	0.334	0.379	0.286	0.318	0.411	0.374	0.279	0.467	0.405
1989	0.406	0.268	0.365	0.399	0.291	0.334	0.437	0.394	0.309	0.492	0.444
1990	0.420	0.266	0.389	0.412	0.305	0.343	0.452	0.408	0.330	0.500	0.465
1991	0.423	0.257	0.387	0.412	0.301	0.338	0.464	0.404	0.324	0.483	0.487
1992	0.446	0.268	0.437	0.446	0.312	0.361	0.494	0.420	0.333	0.493	0.513
1993	0.454	0.268	0.303	0.466	0.327	0.368	0.501	0.425	0.346	0.503	0.518
1994	0.471	0.278	0.317	0.465	0.335	0.388	0.523	0.440	0.356	0.512	0.537
1995	0.483	0.289	0.323	0.483	0.347	0.398	0.540	0.450	0.363	0.523	0.540
1996	0.498	0.298	0.348	0.478	0.359	0.420	0.551	0.463	0.378	0.536	0.562
1997	0.524	0.313	0.399	0.495	0.378	0.436	0.584	0.487	0.408	0.574	0.584
1998	0.554	0.368	0.415	0.522	0.411	0.464	0.618	0.502	0.430	0.605	0.616
1999	0.579	0.413	0.465	0.562	0.452	0.487	0.646	0.527	0.446	0.621	0.637
2000	0.608	0.440	0.478	0.583	0.468	0.519	0.671	0.542	0.468	0.659	0.668
2001	0.626	0.483	0.514	0.606	0.477	0.543	0.686	0.567	0.502	0.684	0.683
2002	0.646	0.518	0.536	0.641	0.500	0.563	0.706	0.588	0.523	0.699	0.700
2003	0.668	0.532	0.565	0.662	0.518	0.593	0.728	0.604	0.536	0.713	0.720
2004	0.690	0.548	0.568	0.680	0.551	0.613	0.751	0.624	0.553	0.737	0.744
2005	0.714	0.567	0.603	0.713	0.575	0.635	0.767	0.647	0.582	0.777	0.775
2006	0.748	0.607	0.642	0.740	0.614	0.664	0.800	0.679	0.617	0.822	0.813
2007	0.783	0.656	0.669	0.777	0.664	0.695	0.831	0.720	0.657	0.865	0.850
2008	0.806	0.715	0.685	0.810	0.681	0.725	0.849	0.743	0.699	0.889	0.862
2009	0.812	0.745	0.717	0.837	0.703	0.742	0.852	0.757	0.694	0.877	0.856
2010	0.836	0.788	0.749	0.867	0.733	0.767	0.872	0.783	0.719	0.917	0.877
Absolute Change in Points											
81-10	0.571	0.705	0.553	0.637	0.636	0.579	0.595	0.569	0.480	0.515	0.510
81-89	0.141	0.185	0.170	0.168	0.195	0.145	0.159	0.181	0.070	0.091	0.076
89-00	0.202	0.172	0.113	0.184	0.176	0.185	0.234	0.147	0.159	0.166	0.224
00-08	0.198	0.275	0.207	0.227	0.213	0.206	0.178	0.201	0.232	0.230	0.194
Per cent Change											
81-10	215.5	845.7	283.6	276.7	657.4	307.9	214.2	266.4	200.4	128.4	138.7
81-89	53.1	222.1	87.1	73.2	200.9	77.3	57.3	84.6	29.1	22.6	20.7
89-00	49.8	64.1	31.0	46.3	60.5	55.6	53.6	37.4	51.3	33.8	50.5
00-08	32.6	62.4	43.2	38.9	45.6	39.8	26.5	37.1	49.5	35.0	29.1
Compound Annual Growth Rate											
81-10	4.04	8.06	4.74	4.68	7.23	4.97	4.03	4.58	3.87	2.89	3.04
81-89	5.47	15.74	8.15	7.11	14.77	7.42	5.83	7.97	3.25	2.58	2.38
89-00	3.74	4.60	2.48	3.52	4.40	4.10	3.98	2.93	3.84	2.68	3.79
00-08	3.59	6.25	4.59	4.20	4.81	4.27	2.98	4.02	5.16	3.82	3.24

Source: CSLS Database of the IEWB for Canada and the Provinces - Table 1

Table 3a: Total Per-capita Consumption Flows, Canada and the Provinces, $2002, 1981-2010

	Canada	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia
1981	26,544	20,635	24,273	25,406	21,073	24,043	26,952	24,873	25,710	30,979	29,882
1982	25,886	20,770	23,779	24,980	21,558	23,417	26,371	25,417	25,010	30,114	28,169
1983	26,202	21,219	24,057	25,052	22,225	24,009	26,732	25,676	25,116	30,228	27,995
1984	26,838	22,213	25,149	26,416	23,189	24,922	27,412	27,262	25,324	30,164	27,862
1985	27,777	23,133	25,485	27,493	24,589	25,978	28,346	28,406	25,504	31,292	28,373
1986	28,513	24,244	25,700	28,382	25,790	26,912	29,131	29,431	26,253	31,372	28,620
1987	29,364	24,873	27,268	29,280	26,579	27,330	30,225	29,816	26,716	32,247	29,909
1988	30,356	26,119	28,787	30,266	27,234	28,258	31,300	30,082	27,000	33,126	31,092
1989	31,123	26,654	29,803	30,886	27,401	28,774	32,128	30,753	27,977	33,931	32,357
1990	31,570	26,575	30,583	31,309	27,848	29,081	32,640	31,194	28,654	34,200	33,042
1991	31,698	26,293	30,504	31,325	27,700	28,932	33,016	31,070	28,450	33,642	33,761
1992	32,444	26,651	32,134	32,422	28,074	29,662	33,991	31,574	28,740	33,961	34,610
1993	32,694	26,646	27,773	33,069	28,571	29,900	34,204	31,735	29,181	34,299	34,782
1994	33,237	26,953	28,239	33,051	28,817	30,546	34,934	32,234	29,492	34,592	35,383
1995	33,647	27,339	28,440	33,640	29,221	30,868	35,498	32,552	29,733	34,934	35,479
1996	34,124	27,628	29,236	33,457	29,602	31,592	35,852	32,975	30,210	35,358	36,198
1997	34,971	28,105	30,904	34,038	30,207	32,118	36,925	33,762	31,180	36,584	36,919
1998	35,938	29,882	31,434	34,910	31,294	33,018	38,012	34,239	31,923	37,604	37,953
1999	36,747	31,367	33,065	36,217	32,616	33,772	38,925	35,061	32,421	38,138	38,647
2000	37,690	32,249	33,482	36,884	33,134	34,803	39,744	35,545	33,138	39,344	39,648
2001	38,301	33,620	34,647	37,643	33,426	35,575	40,236	36,379	34,266	40,185	40,123
2002	38,937	34,778	35,366	38,788	34,185	36,236	40,892	37,039	34,932	40,659	40,685
2003	39,648	35,219	36,296	39,461	34,777	37,212	41,607	37,572	35,345	41,128	41,334
2004	40,365	35,743	36,389	40,038	35,833	37,848	42,360	38,209	35,924	41,890	42,126
2005	41,138	36,377	37,552	41,106	36,621	38,588	42,877	38,960	36,864	43,207	43,138
2006	42,261	37,671	38,798	41,985	37,906	39,521	43,955	40,023	37,990	44,646	44,363
2007	43,383	39,260	39,669	43,192	39,513	40,515	44,954	41,330	39,291	46,051	45,559
2008	44,134	41,184	40,201	44,266	40,077	41,515	45,526	42,085	40,671	46,841	45,969
2009	44,322	42,166	41,240	45,157	40,781	42,066	45,631	42,532	40,489	46,449	45,761
2010	45,117	43,557	42,273	46,109	41,773	42,881	46,288	43,382	41,310	47,739	46,462
Absolute Change in Points											
81-10	18,572	22,922	18,000	20,703	20,699	18,838	19,336	18,509	15,599	16,760	16,580
81-89	4,579	6,019	5,531	5,480	6,327	4,731	5,176	5,880	2,267	2,952	2,475
89-00	6,567	5,594	3,679	5,997	5,733	6,029	7,616	4,792	5,161	5,414	7,291
00-08	6,444	8,935	6,720	7,383	6,943	6,712	5,782	6,540	7,533	7,497	6,320
Per cent Change											
81-10	70.0	111.1	74.2	81.5	98.2	78.4	71.7	74.4	60.7	54.1	55.5
81-89	17.2	29.2	22.8	21.6	30.0	19.7	19.2	23.6	8.8	9.5	8.3
89-00	21.1	21.0	12.3	19.4	20.9	21.0	23.7	15.6	18.4	16.0	22.5
00-08	17.1	27.7	20.1	20.0	21.0	19.3	14.5	18.4	22.7	19.1	15.9
Compound Annual Growth Rate											
81-10	1.85	2.61	1.93	2.08	2.39	2.02	1.88	1.94	1.65	1.50	1.53
81-89	2.01	3.25	2.60	2.47	3.34	2.27	2.22	2.69	1.06	1.14	1.00
89-00	1.76	1.75	1.06	1.63	1.74	1.74	1.95	1.33	1.55	1.35	1.86
00-08	1.99	3.10	2.31	2.31	2.41	2.23	1.71	2.13	2.59	2.20	1.87

Source: CSLS Database of the IEWB for Canada and the Provinces - Table 1

Table 4: Index of the Wealth Domain, Canada and the Provinces, 1981-2010

	Canada	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia
1981	0.253	0.174	0.083	0.139	0.158	0.200	0.196	0.242	0.344	0.579	0.311
1982	0.252	0.172	0.089	0.142	0.150	0.200	0.197	0.237	0.330	0.583	0.297
1983	0.262	0.173	0.094	0.149	0.148	0.204	0.201	0.236	0.343	0.646	0.292
1984	0.262	0.180	0.096	0.159	0.149	0.208	0.206	0.241	0.359	0.622	0.289
1985	0.258	0.176	0.099	0.157	0.146	0.209	0.206	0.236	0.351	0.608	0.283
1986	0.241	0.178	0.102	0.158	0.149	0.214	0.209	0.238	0.318	0.476	0.283
1987	0.248	0.187	0.102	0.168	0.166	0.221	0.218	0.245	0.349	0.455	0.301
1988	0.257	0.207	0.111	0.179	0.190	0.235	0.232	0.256	0.366	0.399	0.325
1989	0.261	0.216	0.116	0.186	0.204	0.238	0.236	0.261	0.379	0.406	0.330
1990	0.276	0.223	0.135	0.204	0.221	0.250	0.247	0.273	0.385	0.437	0.347
1991	0.268	0.221	0.141	0.201	0.216	0.250	0.247	0.271	0.360	0.377	0.333
1992	0.265	0.224	0.148	0.195	0.209	0.250	0.246	0.270	0.362	0.375	0.317
1993	0.264	0.222	0.157	0.192	0.200	0.249	0.243	0.266	0.350	0.385	0.313
1994	0.270	0.238	0.160	0.193	0.205	0.254	0.247	0.270	0.375	0.392	0.321
1995	0.280	0.262	0.167	0.203	0.230	0.269	0.254	0.279	0.396	0.382	0.333
1996	0.291	0.273	0.173	0.208	0.245	0.280	0.260	0.283	0.397	0.423	0.347
1997	0.302	0.289	0.182	0.217	0.259	0.293	0.268	0.292	0.408	0.434	0.361
1998	0.303	0.308	0.186	0.223	0.267	0.298	0.269	0.295	0.396	0.401	0.369
1999	0.322	0.355	0.195	0.230	0.280	0.308	0.281	0.304	0.434	0.482	0.382
2000	0.350	0.436	0.203	0.262	0.290	0.316	0.292	0.315	0.490	0.608	0.406
2001	0.350	0.423	0.214	0.263	0.294	0.321	0.295	0.316	0.468	0.577	0.412
2002	0.352	0.435	0.222	0.260	0.300	0.326	0.298	0.318	0.470	0.581	0.409
2003	0.364	0.435	0.229	0.262	0.304	0.332	0.303	0.322	0.497	0.621	0.425
2004	0.380	0.484	0.239	0.270	0.319	0.344	0.314	0.333	0.526	0.649	0.437
2005	0.405	0.669	0.248	0.277	0.324	0.353	0.324	0.344	0.579	0.708	0.458
2006	0.426	0.661	0.262	0.291	0.342	0.366	0.340	0.362	0.606	0.768	0.462
2007	0.428	0.719	0.266	0.298	0.351	0.372	0.347	0.368	0.616	0.722	0.464
2008	0.479	0.788	0.276	0.310	0.370	0.385	0.363	0.390	0.675	0.917	0.495
2009	0.427	0.813	0.275	0.295	0.344	0.370	0.345	0.370	0.639	0.848	0.472
2010	0.436	0.803	0.285	0.302	0.346	0.375	0.350	0.376	0.633	0.831	0.474
Absolute Change in Points											
81-10	0.183	0.628	0.201	0.162	0.188	0.175	0.153	0.133	0.289	0.251	0.163
81-89	0.008	0.042	0.033	0.047	0.046	0.038	0.039	0.019	0.035	-0.174	0.019
89-00	0.089	0.220	0.087	0.076	0.086	0.078	0.056	0.054	0.111	0.203	0.076
00-08	0.129	0.352	0.074	0.048	0.081	0.069	0.071	0.074	0.184	0.308	0.088
Per cent Change											
81-10	72.5	360.7	241.6	116.7	119.2	87.5	78.1	54.9	84.1	43.3	52.3
81-89	3.3	24.2	39.2	33.8	29.1	19.1	20.1	7.8	10.3	-30.0	6.1
89-00	34.2	101.5	74.7	40.6	42.1	32.8	23.6	20.6	29.3	50.0	23.2
00-08	36.9	80.7	36.3	18.2	27.9	21.7	24.4	23.6	37.6	50.7	21.7
Compound Annual Growth Rate											
81-10	1.90	5.41	4.33	2.70	2.74	2.19	2.01	1.52	2.13	1.25	1.46
81-89	0.40	2.75	4.22	3.71	3.25	2.21	2.31	0.94	1.24	-4.36	0.75
89-00	2.71	6.57	5.20	3.15	3.24	2.61	1.95	1.72	2.36	3.75	1.91
00-08	4.00	7.68	3.95	2.12	3.12	2.48	2.76	2.68	4.07	5.26	2.49

Source: CSLS Database of the IEWB for Canada and the Provinces - Table 2

Table 4a: Total Per-capita Wealth Stocks, Canada and the Provinces, $2002, 1981-2010

	Canada	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia
1981	147,742	119,766	87,350	107,269	113,907	128,870	127,701	144,067	180,210	264,257	168,518
1982	147,548	118,942	89,212	108,442	111,202	129,037	127,778	141,990	175,431	265,473	163,465
1983	150,906	119,454	91,110	110,894	110,566	130,417	129,377	141,887	179,827	287,912	161,889
1984	151,055	121,652	91,983	114,213	110,615	131,930	131,006	143,695	185,667	279,525	160,835
1985	149,521	120,421	93,027	113,688	109,713	132,179	131,221	141,911	182,807	274,610	158,619
1986	143,661	121,181	93,941	113,919	110,840	133,820	132,101	142,375	171,212	227,347	158,534
1987	146,238	124,469	93,900	117,535	116,765	136,446	135,475	144,917	181,923	219,847	165,048
1988	149,215	131,429	97,159	121,544	125,413	141,271	140,489	148,925	188,179	199,915	173,368
1989	150,688	134,823	99,004	124,038	130,303	142,502	141,751	150,791	192,862	202,257	175,312
1990	156,040	137,101	105,646	130,204	136,378	146,963	145,615	155,156	194,854	213,645	181,526
1991	153,310	136,462	107,958	129,433	134,588	146,633	145,775	154,368	186,177	192,012	176,371
1992	152,305	137,354	110,391	127,113	132,006	146,803	145,239	153,773	186,552	191,450	170,609
1993	151,868	136,960	113,488	126,106	128,962	146,484	144,351	152,460	182,531	194,816	169,174
1994	154,072	142,491	114,638	126,506	130,769	148,338	145,882	153,958	191,396	197,293	172,075
1995	157,366	151,062	117,306	130,198	139,646	153,579	148,081	157,174	198,686	193,764	176,408
1996	161,382	155,013	119,416	131,697	145,030	157,333	150,185	158,664	199,304	208,537	181,452
1997	165,277	160,830	122,509	134,863	149,890	162,036	153,055	161,846	203,143	212,238	186,478
1998	165,637	167,327	123,920	137,081	152,794	163,827	153,684	162,692	199,019	200,689	189,348
1999	172,324	184,397	127,040	139,547	157,525	167,471	157,865	166,137	212,320	229,692	193,763
2000	182,467	213,142	129,900	151,017	160,879	170,357	161,645	170,025	232,433	274,539	202,575
2001	182,374	208,434	134,038	151,504	162,513	172,246	162,728	170,187	224,480	263,533	204,633
2002	183,011	212,863	136,694	150,524	164,442	173,797	163,756	170,983	225,362	264,839	203,428
2003	187,268	212,775	139,299	150,938	165,900	176,025	165,837	172,599	234,910	279,188	209,185
2004	193,011	230,349	142,856	153,864	171,304	180,261	169,563	176,363	245,153	289,132	213,466
2005	202,194	296,159	145,895	156,496	173,098	183,526	173,220	180,262	263,943	309,997	221,003
2006	209,518	293,525	150,892	161,513	179,593	188,078	179,025	186,587	273,585	331,389	222,542
2007	210,151	314,209	152,454	164,069	182,728	190,215	181,362	189,043	277,310	315,254	223,054
2008	228,491	338,711	156,139	168,052	189,647	194,808	186,988	196,542	298,185	384,531	234,038
2009	209,973	347,444	155,780	162,781	180,329	189,594	180,717	189,740	285,481	359,981	226,066
2010	213,056	343,900	159,140	165,205	180,959	191,217	182,404	191,546	283,254	353,815	226,515
Absolute Change in Points											
81-10	65,313	224,134	71,790	57,936	67,052	62,347	54,703	47,478	103,045	89,558	57,996
81-89	2,946	15,057	11,654	16,769	16,396	13,633	14,050	6,724	12,652	-62,000	6,794
89-00	31,779	78,319	30,896	26,979	30,577	27,854	19,894	19,234	39,571	72,282	27,262
00-08	46,024	125,570	26,239	17,034	28,768	24,452	25,343	26,517	65,753	109,993	31,463
Per cent Change											
81-10	44.2	187.1	82.2	54.0	58.9	48.4	42.8	33.0	57.2	33.9	34.4
81-89	2.0	12.6	13.3	15.6	14.4	10.6	11.0	4.7	7.0	-23.5	4.0
89-00	21.1	58.1	31.2	21.8	23.5	19.5	14.0	12.8	20.5	35.7	15.6
00-08	25.2	58.9	20.2	11.3	17.9	14.4	15.7	15.6	28.3	40.1	15.5
Compound Annual Growth Rate											
81-10	1.27	3.70	2.09	1.50	1.61	1.37	1.24	0.99	1.57	1.01	1.03
81-89	0.25	1.49	1.58	1.83	1.70	1.26	1.31	0.57	0.85	-3.29	0.50
89-00	1.75	4.25	2.50	1.81	1.93	1.64	1.20	1.10	1.71	2.82	1.32
00-08	2.85	5.96	2.33	1.34	2.08	1.69	1.84	1.83	3.16	4.30	1.82

Source: CSLS Database of the IEWB for Canada and the Provinces - Table 2

Table 5: Index of the Equality Domain, Canada and the Provinces, 1981-2010

	Canada	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia
1981	0.642	0.443	0.525	0.442	0.350	0.597	0.763	0.484	0.376	0.714	0.660
1982	0.633	0.409	0.576	0.519	0.360	0.616	0.738	0.515	0.518	0.712	0.571
1983	0.600	0.242	0.643	0.538	0.271	0.616	0.670	0.565	0.499	0.579	0.625
1984	0.579	0.324	0.572	0.541	0.391	0.545	0.695	0.532	0.382	0.524	0.555
1985	0.623	0.276	0.651	0.539	0.529	0.610	0.744	0.594	0.304	0.676	0.517
1986	0.646	0.364	0.721	0.550	0.585	0.598	0.774	0.599	0.266	0.665	0.632
1987	0.667	0.373	0.679	0.602	0.516	0.599	0.822	0.627	0.501	0.598	0.626
1988	0.691	0.516	0.716	0.650	0.604	0.640	0.808	0.627	0.425	0.686	0.736
1989	0.711	0.590	0.681	0.631	0.608	0.678	0.836	0.650	0.433	0.600	0.731
1990	0.645	0.461	0.752	0.669	0.603	0.624	0.768	0.573	0.292	0.651	0.555
1991	0.637	0.434	0.675	0.648	0.587	0.591	0.735	0.588	0.363	0.637	0.671
1992	0.627	0.346	0.746	0.638	0.592	0.635	0.724	0.540	0.363	0.505	0.617
1993	0.635	0.450	0.834	0.630	0.576	0.585	0.743	0.546	0.464	0.598	0.628
1994	0.633	0.450	0.873	0.545	0.508	0.582	0.727	0.571	0.476	0.647	0.620
1995	0.612	0.382	0.760	0.566	0.544	0.523	0.721	0.669	0.418	0.643	0.604
1996	0.554	0.363	0.729	0.497	0.561	0.548	0.610	0.592	0.462	0.575	0.514
1997	0.522	0.417	0.701	0.453	0.505	0.473	0.592	0.570	0.581	0.552	0.473
1998	0.514	0.357	0.744	0.417	0.521	0.514	0.597	0.519	0.485	0.519	0.411
1999	0.508	0.294	0.554	0.469	0.513	0.548	0.561	0.477	0.547	0.563	0.379
2000	0.502	0.317	0.539	0.483	0.532	0.493	0.585	0.488	0.420	0.581	0.376
2001	0.511	0.411	0.577	0.467	0.525	0.515	0.596	0.547	0.510	0.599	0.314
2002	0.499	0.321	0.631	0.459	0.455	0.522	0.562	0.493	0.500	0.661	0.280
2003	0.503	0.338	0.689	0.423	0.412	0.545	0.583	0.528	0.494	0.539	0.306
2004	0.478	0.313	0.717	0.450	0.440	0.581	0.494	0.527	0.393	0.539	0.327
2005	0.488	0.417	0.800	0.516	0.420	0.513	0.526	0.482	0.242	0.647	0.362
2006	0.527	0.469	0.738	0.527	0.431	0.574	0.554	0.503	0.288	0.711	0.387
2007	0.535	0.523	0.803	0.487	0.424	0.546	0.575	0.508	0.431	0.693	0.449
2008	0.493	0.435	0.682	0.427	0.467	0.486	0.519	0.573	0.516	0.734	0.343
2009	0.490	0.490	0.786	0.434	0.519	0.557	0.502	0.570	0.523	0.563	0.334
2010	0.490	0.490	0.786	0.434	0.519	0.557	0.502	0.570	0.523	0.563	0.334
Absolute Change in Points											
81-10	-0.152	0.047	0.344	-0.090	0.169	-0.040	-0.261	0.087	0.147	-0.151	-0.327
81-89	0.069	0.147	0.239	0.107	0.258	0.081	0.073	0.167	0.057	-0.114	0.071
89-00	-0.209	-0.273	-0.142	-0.149	-0.076	-0.185	-0.251	-0.163	-0.013	-0.020	-0.355
00-08	-0.009	0.118	0.143	-0.055	-0.066	-0.007	-0.066	0.085	0.096	0.153	-0.033
Per cent Change											
81-10	-23.6	10.6	77.8	-17.2	48.2	-6.7	-34.2	18.0	39.1	-21.1	-49.5
81-89	10.8	33.1	54.0	20.4	73.5	13.5	9.6	34.5	15.3	-15.9	10.7
89-00	-29.4	-46.3	-20.9	-23.6	-12.4	-27.3	-30.0	-25.0	-3.1	-3.3	-48.6
00-08	-1.7	37.1	26.6	-11.4	-12.3	-1.4	-11.3	17.5	22.9	26.4	-8.7
Compound Annual Growth Rate											
81-10	-0.93	0.35	2.00	-0.65	1.37	-0.24	-1.43	0.57	1.15	-0.81	-2.33
81-89	1.29	3.64	5.55	2.35	7.13	1.60	1.15	3.77	1.79	-2.15	1.28
89-00	-3.11	-5.50	-2.11	-2.41	-1.20	-2.86	-3.19	-2.58	-0.28	-0.30	-5.86
00-08	-0.22	4.03	2.99	-1.51	-1.63	-0.18	-1.49	2.03	2.61	2.97	-1.13

Source: CSLS Database of the IEWB for Canada and the Provinces - Table 9

Table 6: Index of the Economic Security Domain, Canada and the Provinces, 1981-2010

	Canada	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia
1981	0.632	0.413	0.451	0.629	0.520	0.561	0.682	0.615	0.721	0.713	0.610
1982	0.602	0.412	0.500	0.650	0.477	0.558	0.636	0.635	0.764	0.645	0.553
1983	0.577	0.334	0.509	0.651	0.419	0.575	0.588	0.548	0.752	0.575	0.577
1984	0.599	0.460	0.586	0.606	0.478	0.602	0.628	0.653	0.700	0.592	0.516
1985	0.605	0.468	0.550	0.591	0.497	0.592	0.644	0.628	0.668	0.638	0.516
1986	0.594	0.530	0.592	0.544	0.503	0.569	0.650	0.574	0.638	0.626	0.515
1987	0.582	0.488	0.581	0.568	0.484	0.570	0.642	0.609	0.593	0.607	0.500
1988	0.619	0.548	0.602	0.613	0.535	0.599	0.664	0.648	0.629	0.610	0.573
1989	0.637	0.573	0.568	0.607	0.552	0.598	0.697	0.641	0.614	0.632	0.584
1990	0.621	0.539	0.568	0.606	0.541	0.581	0.659	0.626	0.624	0.628	0.615
1991	0.595	0.529	0.525	0.596	0.534	0.583	0.603	0.632	0.606	0.606	0.607
1992	0.580	0.494	0.499	0.570	0.491	0.558	0.600	0.600	0.595	0.593	0.590
1993	0.566	0.493	0.522	0.535	0.501	0.532	0.577	0.606	0.577	0.610	0.593
1994	0.571	0.490	0.498	0.539	0.495	0.545	0.585	0.577	0.564	0.593	0.609
1995	0.576	0.502	0.489	0.553	0.552	0.553	0.572	0.618	0.574	0.606	0.632
1996	0.564	0.498	0.478	0.531	0.552	0.550	0.548	0.585	0.592	0.620	0.610
1997	0.563	0.526	0.450	0.508	0.512	0.543	0.553	0.573	0.588	0.619	0.608
1998	0.566	0.494	0.458	0.511	0.526	0.566	0.554	0.604	0.639	0.641	0.559
1999	0.570	0.505	0.450	0.576	0.518	0.569	0.563	0.554	0.611	0.640	0.571
2000	0.579	0.474	0.497	0.543	0.535	0.573	0.571	0.568	0.593	0.636	0.607
2001	0.551	0.500	0.432	0.516	0.473	0.559	0.540	0.528	0.568	0.626	0.550
2002	0.512	0.477	0.474	0.472	0.470	0.534	0.487	0.535	0.537	0.603	0.491
2003	0.508	0.452	0.440	0.478	0.444	0.524	0.489	0.543	0.550	0.587	0.478
2004	0.516	0.431	0.432	0.501	0.458	0.552	0.482	0.542	0.561	0.596	0.494
2005	0.518	0.423	0.458	0.498	0.420	0.527	0.478	0.526	0.545	0.637	0.543
2006	0.522	0.503	0.419	0.474	0.430	0.534	0.479	0.550	0.540	0.660	0.526
2007	0.530	0.474	0.456	0.462	0.462	0.542	0.484	0.545	0.581	0.647	0.552
2008	0.521	0.474	0.424	0.438	0.443	0.531	0.464	0.557	0.635	0.656	0.535
2009	0.486	0.459	0.428	0.402	0.423	0.498	0.433	0.526	0.595	0.616	0.492
2010	0.485	0.473	0.454	0.393	0.411	0.500	0.426	0.521	0.596	0.620	0.491
Absolute Change in Points											
81-10	-0.147	0.060	0.003	-0.236	-0.109	-0.062	-0.256	-0.094	-0.125	-0.093	-0.118
81-89	0.005	0.160	0.116	-0.022	0.032	0.037	0.016	0.026	-0.107	-0.081	-0.026
89-00	-0.058	-0.099	-0.070	-0.064	-0.018	-0.025	-0.126	-0.073	-0.022	0.004	0.023
00-08	-0.058	0.000	-0.073	-0.105	-0.092	-0.042	-0.107	-0.011	0.042	0.020	-0.072
Per cent Change											
81-10	-23.3	14.5	0.7	-37.6	-21.0	-11.0	-37.5	-15.2	-17.4	-13.0	-19.4
81-89	0.7	38.6	25.8	-3.6	6.2	6.6	2.3	4.3	-14.8	-11.3	-4.2
89-00	-9.1	-17.3	-12.4	-10.5	-3.2	-4.1	-18.1	-11.4	-3.5	0.6	4.0
00-08	-10.0	0.0	-14.8	-19.3	-17.1	-7.4	-18.8	-2.0	7.1	3.1	-11.9
Compound Annual Growth Rate											
81-10	-0.91	0.47	0.02	-1.61	-0.81	-0.40	-1.61	-0.57	-0.66	-0.48	-0.74
81-89	0.09	4.17	2.91	-0.45	0.75	0.80	0.28	0.53	-1.98	-1.49	-0.53
89-00	-0.86	-1.71	-1.19	-1.00	-0.30	-0.38	-1.80	-1.10	-0.33	0.05	0.35
00-08	-1.31	0.00	-1.98	-2.65	-2.32	-0.95	-2.57	-0.25	0.86	0.39	-1.57

Source: CSLS Database of the IEWB for Canada and the Provinces - Table 9

Table 7: Summary of the Effects of Alternative Weighting Schemes on the Index of Economic Well-being, Canada and the Provinces, 1981-2010

	Baseline				**Alternative 1**				**Alternative 2**				**Alternative 3**			
	1981	2010	Change in Points	Compound Annual Growth	1981	2010	Change in Points	Compound Annual Growth	1981	2010	Change in Points	Compound Annual Growth	1981	2010	Change in Points	Compound Annual Growth
Canada	0.448	0.562	0.114	0.78	0.450	0.622	0.172	1.12	0.383	0.586	0.202	1.47	0.524	0.552	0.028	0.18
Newfoundland	0.279	0.639	0.360	2.90	0.265	0.636	0.371	3.07	0.224	0.688	0.464	3.95	0.335	0.576	0.241	1.88
Prince Edward Island	0.293	0.568	0.275	2.31	0.310	0.638	0.328	2.52	0.243	0.496	0.253	2.49	0.360	0.629	0.269	1.95
Nova Scotia	0.381	0.499	0.118	0.94	0.394	0.584	0.189	1.36	0.333	0.520	0.188	1.55	0.459	0.495	0.037	0.26
New Brunswick	0.281	0.502	0.221	2.02	0.272	0.560	0.288	2.52	0.258	0.497	0.238	2.28	0.331	0.512	0.181	1.51
Quebec	0.387	0.550	0.163	1.22	0.385	0.609	0.224	1.59	0.316	0.547	0.231	1.91	0.465	0.564	0.099	0.67
Ontario	0.480	0.538	0.058	0.39	0.492	0.616	0.124	0.78	0.385	0.549	0.164	1.23	0.585	0.538	-0.047	-0.29
Manitoba	0.389	0.562	0.174	1.28	0.384	0.623	0.239	1.68	0.357	0.560	0.203	1.56	0.445	0.579	0.134	0.91
Saskatchewan	0.420	0.618	0.198	1.34	0.404	0.631	0.226	1.54	0.435	0.649	0.214	1.39	0.449	0.595	0.146	0.98
Alberta	0.602	0.733	0.131	0.68	0.575	0.746	0.170	0.90	0.565	0.789	0.225	1.16	0.638	0.678	0.040	0.21
British Columbia	0.487	0.544	0.057	0.38	0.496	0.605	0.109	0.69	0.429	0.614	0.185	1.24	0.552	0.504	-0.048	-0.31

Source: CSLS Database for the IEWB for Canada and the Provinces - Table 9, Appendix Tables 31-33

Weights:

Baseline: 0.25 Consumption + 0.25 Wealth + 0.25 Equality + 0.25 Economic Security

Alternative 1: 0.40 Consumption + 0.10 Wealth + 0.25 Equality + 0.25 Economic Security

Alternative 2: 0.33 Consumption + 0.33 Wealth + 0.00 Equality + 0.33 Economic Security

Alternative 3: 0.20 Consumption + 0.10 Wealth + 0.40 Equality + 0.30 Economic Security