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CENTRE FOR THE STUDY OF LIVING STANDARDS The Index of Economic Well-being for New Brunswick, 1981-2019

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# The Index of Economic Well-being for New Brunswick, 1981-2019

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# The Index of Economic Well-being for New Brunswick, 1981-2019

### Abstract

This report presents estimates of the Index of Economic Well-being (IEWB) and its four domains (consumption flows, stocks of wealth, economic equality and economic security) for New Brunswick from 1981 to 2019. We find that the IEWB for New Brunswick increased at an average annual rate of 1.34 percent per year over the period. Among the four domains that compose the IEWB, consumption and equality have had positive growth rates, while the wealth domain and the security domain have had small falls. The consumer domain had the highest growth rate (4.31 percent per year) and the equality domain had a growth rate of 1.81 percent per year over the period. The wealth domain declined by 0.24 percent per year and the security domain declined by 0.27 percent per year between 1981-2019. In 2019, among the provinces, New Brunswick is in ninth place, but the province stands out with the second highest ranking in terms of equality. In terms of growth rates, the province had the third highest growth rate in the IEWB between 1981-2019. It also had the second highest growth rate among the provinces in the consumption domain and the best growth rate in the equality domain.

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# The Index of Economic Well-being for New Brunswick, 1981-2019<sup>1</sup>

### **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), which is a composite index based on a conceptual framework developed by Osberg (1985). Over the past sub-period, 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 methodological changes to the Index.

The IEWB is comprised of four domains of economic welfare: per-capita consumption, per-capita wealth, economic equality, and 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. By basing the IEWB on data from each of these domains, we attempt to capture the multifaceted nature of economic well-being. Our domain approach also allows individuals to assign weights in accordance with their value judgments (e.g., consumption versus economic equality).

This report presents updated estimates of the IEWB for New Brunswick over the 1981 to 2019 period, with a particular emphasis on developments post-2000. The report outlines trends in the four domains of economic well-being that make up the IEWB. This report finds that economic well-being in New Brunswick has improved significantly between 1981 and 2019.

### Trends in the Index of Economic Well-being, 1981-2019

Since 1981, the IEWB for New Brunswick has enjoyed considerable growth. The overall IEWB rose 0.189 points from 0.288 in 1981 to 0.477 in 2019. This improvement is the result of the growth rate of 1.34 per cent per year over the period. However, growth of the IEWB fluctuated over the period:

• **1981-2000**: The IEWB for New Brunswick grew 2.25 per cent per year from 0.288 in 1981 to 0.439 in 2000. The IEWB saw the fastest growth in this sub-period.

<sup>&</sup>lt;sup>1</sup> This report was prepared by CSLS Executive Director Andrew Sharpe, with assistance from Nettie Bonsall and Abderrahmane Marzeh. The CSLS would like to thank the Crabtree Foundation for financial support.

- **2000-2019**: The IEWB grew 0.4 per cent per year from 0.439 in 2000 to 0.477 in 2019. The IEWB experienced faster growth in the period before 2000.
- **2000-2008**: The IEWB increased 0.6 per cent per year from 0.439 in 2000 to 0.463 in 2008.
- 2008-2019: The IEWB grew at an annual rate of 0.3 percent per year.
- **2008-2014:** The IEWB decreased by 0.3 percent per year from 0.463 in 2008 to 0.455 in 2014. This is the only subperiod when the IEWB had a decline. This is due to the fall in the wealth domain of 3.7 percent per year which is caused by the decline in the natural resources stock and the increase in greenhouse gas emissions.
- **2014-2019:** The IEWB grew at an annual rate of 1 percent per year. This is the second highest growth rate for all subperiods combined. This growth is mainly the effect of growth in the equality and security domains. These two domains had the highest growth of all other sub-periods.

### **Trends in the Four Domains of the Index of Economic Well-being, 1981-2019**

The overall increase in economic well-being can be explained by the growth in consumption and equality. The domains of economic wealth and economic security decreased between 1981-2019.

- The index of consumption had the highest growth among the components of the IEWB. The scaled consumption domain increased 0.502 points or 4.31 per cent per year from 0.127 in 1981 to 0.629 in 2019. This growth was driven primarily by the increases in personal consumption per capita, in government expenditure per capita and in unpaid work per capita over the period. Growth in the index of consumption was much higher between 1981-2000 (6.96 percent per year) than between 2000-2019 (1.73 percent per year). This can be explained by the fact that on the one hand the growth rates in personal consumption per capita, in government expenditures per capita and in unpaid work per capita were lower in 2000-2019 than in 1981-2000 (the last component even had a fall) and on the other hand the regrettable expenditures per capita were higher after 2000 (Table 3, Panel C).
- The wealth domain had a fall of -0.24 percent per year between 1981-2019. The index of wealth decreased 0.017 points from 0.198 points in 1981 to 0.181 points in 2019. Between 1981-2000 the province grew by 1.04 percent per year, however between 2000-2019 the province experiences a drop of -1.5 percent per year. During this second period, the largest reduction was between 2008-2014 (-3.7 percent per year). This decrease is explained by the fact that during this period, the natural resources stock had the largest decrease in growth (-8.7 percent per year), reflecting the plunge in oil prices and also because the largest increase in growth in net international investment (19.25 percent per

year), the largest the province experienced for the overall period. At the end of the second period, specifically between 2014-2019, the province had a growth rate of 1 percent per year, explained by the significant decline of 4 percent per year in net international investment (Table 7, Panel C).

- The index of economic equality had the second-best growth among the domains that compose the IEWB. The index growth over the overall period was 1.81 percent per year, showing an increase of 0.322 points from 0.329 points in 1981 to 0.651 points in 2019. This improvement is explained by the larger increase in the growth rate of the index of poverty intensity for the overall period (2.3 percent per year) compared to the growth of the index of income inequality (0.75 percent per year). The growth of the index of economic equality stands out between 2014-2019 with an annual growth of 3.4 percent per year, thanks to the growth of the index of poverty during these years of 4 percent per year (Table 8, Panel C).
- The index of economic security decreased by 0.27 percent per year between 1981-2019 or 0.048 points from 0.497 points in 1981 to 0.449 points in 2019. This decrease is mainly due to the decline over the period in the index for the risk imposed by illness (-2.77 percent per year) which is weighted the most among the components of the index of economic security. The same explanation is valid for the largest decline in the index of economic security of -1.21 percent per year between 2000-2008. During this period, the fall in the risk caused by illness was 5.5 percent per year. Between 2014-2019, the index of economic security had its negative growth of -0.6 percent per year. This has two explanations, the first being the decrease of the index for the risk of illness (-6.4 percent per year) and the second reason is the largest growth of the index of the risk imposed by unemployment (2.7 percent per year) (Table 9, Panel C), which has the second highest weight in the calculation of the index of economic security.

In summary, the indices in the domains of wealth, equality, security have had their best growth rate between 2014-2019. Only, the consumption index had its best growth between 1981-2000. As for the lowest growth rates for the indices, the consumption and wealth domains had it towards the end of the period between 2014-2019 (0 and 0.3 percent per year) and 2008-2014 (0.4 and -3.7 percent per year) respectively. For both equality and security, the lowest growth rate was between 2000-2008. Finally, comparing the growth rates of the indices between the two sub-periods, pre-2000 and post-2000, the growth rates for all domains were stronger in the first sub-period.

### **Rankings for the Index of Economic Well-being by Province, 1981-2019**

Based on index levels in 2019, New Brunswick generally ranked near the bottom of the rankings. The New Brunswick IEWB index ranked ninth among the provinces in 2019. Regarding the components of the IEWB, although the province experienced a high rate of growth in consumption between 1981-2019, among the provinces, its index ranked ninth. The best place the province was able to achieve in 2019 was second place with its index of economic equality.

In terms of growth rates between 1981-2019, the province managed to gain better places than the places obtained based on absolute index values. This can be seen as a catch-up effect. In terms of growth rate in the IEWB, the province placed third. For the components of the IEWB, the worst place occupied (eighth among the provinces) was in the growth rate of wealth. Followed by the place occupied in the growth rate in the index of economic security (fifth place) and finally the second place for the growth rate in the field of consumption and the exceptional first place in the growth rate of the index of economic equality.

Exhibit 1: Ranking by Index of Econ	omic Well-being and its	s Components, Canada	i and the
Provinces			

Levels in 2019							
Rank	Index of Economic Well-being	Index of Consumption	Index of Wealth	Index of Economic Equality	Index of Economic Security		
1	British Columbia	Alberta	Newfoundland and Labrador	Alberta	British Columbia		
2	Newfoundland and Labrador	Ontario	British Columbia	New Brunswick	Alberta		
3	Alberta	British Columbia	Ontario	Prince Edward Island	Canada		
4	Ontario	Nova Scotia	Quebec	British Columbia	Quebec		
5	Canada	Canada	Manitoba	Quebec	Saskatchewan		
6	Quebec	Manitoba	Canada	Canada	Manitoba		
7	Manitoba	Newfoundland and Labrador	Saskatchewan	Newfoundland and Labrador	Ontario		
8	Prince Edward Island	Saskatchewan	Prince Edward Island k	Ontario	Newfoundland and Labrador		
9	New Brunswick	New Brunswick	New Brunswick	Nova Scotia	Prince Edward Island		
10	Saskatchewan	Quebec	Alberta	Manitoba	New Brunswick		
11	Nova Scotia	Prince Edward Island	Nova Scotia	Saskatchewan	Nova Scotia		

#### Panel A: Levels

Growth Rates, 1981-2019							
Rank	Index of Economic Well-being	Index of Consumption	Index of Wealth	Index of Economic Equality	Index of Economic Security		
1	Newfoundland and Labrador	Newfoundland and Labrador	Newfoundland and Labrador	New Brunswick	Newfoundland and Labrador		
2	Prince Edward Island	New Brunswick	Prince Edward Island	Prince Edward Island	Prince Edward Island		
3	New Brunswick	Quebec	Quebec	Newfoundland and Labrador	British Columbia		
4	Quebec	Prince Edward Island	Ontario	Saskatchewan	Quebec		
5	British Columbia	Manitoba	British Columbia	Alberta	New Brunswick		
6	Manitoba	Ontario	Manitoba	Nova Scotia	Canada		
7	Canada	Canada	Canada	Quebec	Manitoba		
8	Nova Scotia	Nova Scotia	New Brunswick	Manitoba	Alberta		
9	Ontario	British Columbia	Nova Scotia	Canada	Saskatchewan		
10	Saskatchewan	Saskatchewan	Saskatchewan	British Columbia	Ontario		
11	Alberta	Alberta	Alberta	Ontario	Nova Scotia		

### **Panel B: Growth Rates**

# The Index of Economic Well-being for New Brunswick, 1981-2019

# I. The Index of Economic Well-being: Motivation and Framework

The literature on social indicators commonly, and correctly, asserts that there is more to 'well-being' than material prosperity. The IEWB agrees and argues, furthermore, that although access to economic resources plays a key role in overall well-being, there is more to *economic* well-being than money income. Although money income – specifically, real Gross Domestic Product (GDP) per capita — is the statistic most commonly used to indicate economic progress, it is an inadequate measure of economic well-being. Our calculation of the IEWB is intended to provide a more accurate measure of trends in economic well-being by broadening the definition of economic well-being.

The compilers of the national accounts have long protested that their attempt to measure in GDP the aggregate money value of marketed economic output was never intended as a full measure of economic well-being. Nevertheless, GDP is has often been used as such, despite the fact that GDP accounting omits important aspects of individuals' command over resources (for example, leisure time and longevity of life) and ignores the sustainability of aggregate consumption and the inequality and insecurity which individuals experience. In this paper, our calculation of the IEWB demonstrates that an alternative measure of "access to economic resources" is possible, plausible, and capable of making a difference.

However, we emphasize that in focusing on purely economic aspects of well-being, we do not intend to downplay the importance of non-economic dimensions of life for "well-being," more broadly conceived. On the contrary, we think that some non-economic dimensions of life are too important to be combined with economic variables in an over-all index. We see, for example, political liberties such as freedom of speech and assembly as crucial for a broader conception of well-being. However, including non-economic issues in an aggregate well-being index along with economic variables would build in the implicit trade-off assumption that a little more income can always offset a little less in non-economic goods – and we reject that perspective. We hope instead to provide a better measure of "access to resources needed for a decent standard of living." To this end, we place particular emphasis on sustainability and the sensitivity of measures of aggregate "command over resources" to the omission or inclusion of measures of income distribution and economic security.

In our view, indices of societal well-being are calculated in the hope that they can help guide social decision-making. No individual needs any indices of societal well-being to evaluate the impact of a public policy decision on their own personal well-being. However, civil servants and politicians are called upon on a daily basis to answer questions such as "Would public policy X make Canada better off?" Less frequently, voters also have to think about the same issues. As long as some individuals care, some of the time, about societal well-being as well as caring about their own personal well-being, indices of societal well-being can be useful guides for decision-making.

In developing the Index of Economic Well-Being, based on four dimensions of economic well-being (consumption, wealth accumulation, economic equality, and economic security), this report attempts to construct more accurate measures of effective consumption, economic security and societal accumulation. However, unlike other indices, we do not argue that the weights assigned to these dimensions of economic well-being are unique and that "Canada's economic well-being" is a single, objective number. As individuals differ in their values, in our view it is not possible to define an objective index of societal well-being independent of the preferences of individuals. Because societal well-being has multiple dimensions and because individuals differ in their subjective valuation of each dimension's relative importance, individuals differ in their evaluations of social states. When well-informed groups are asked for their personal assessment of the relative importance of each of these four dimensions of well-being, the central tendency of the distribution of weights is reasonably close to our "base case" of equal weighting, but there is a large range of value preferences on each dimension.

Hence, one should think of each individual member of society as subjectively evaluating the objective data available to them and then coming to a personal conclusion about society's well-being. Many public policies have outcomes that cannot be measured in directly comparable units, as a practical matter, individuals often have to come to a summative decision in order to decide between policies – that is, have a way of "adding everything up" across conceptually dissimilar domains. Since individuals, particularly in democracies, participate in decisions that will affect the collectivity, they face the problem of coming to a subjective evaluation of social states. The motivation for constructing the IEWB is that individuals need organized, objective data to effectively evaluate economic well-being.

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, without assuming that they all share exactly the same values. In our perspective, the purpose of index construction should be to assist individuals — e.g., as voters in elections and as bureaucrats in policy making — to think systematically about public policy, regardless of their personal value positions.

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 2 illustrates.

Exhibit 2. Conceptual Francwork for the findex of Economic Wen-being					
Concept	Present	Future			
"Typical Citizen"/ "Representative Agent"	Average flow of current income	Aggregate accumulation of productive stocks			
Heterogeneity in Experiences	Distribution of potential consumption – income inequality and poverty	Insecurity of future incomes			

Exhibit 2: Conceptual Framework for the Index of Economic Well-being

When an average income flow variable like GDP per capita or average personal income is used as a summative index of well-being, the analyst is implicitly stopping in the first quadrant of Exhibit 2. They are assuming that the experience of a representative agent can summarize the well-being of society and that the measured income flow optimally weighs 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, 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 depends on both current consumption and on the importance they assign to future consumption – i.e., 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 enable citizens to apply their differing values and allow analysts to distinguish between current consumption and the accumulation of productive assets which determines the sustainability of current levels of consumption.

Some individuals may also be concerned about the degree to which all citizens 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. Because the future is uncertain, and complete insurance is unobtainable (either privately or through the welfare state), individuals also care about the degree to which the economic future is secure for themselves and others.

If the objective of index construction is to assist public policy discussion, one must recognize that discussion can easily be overwhelmed by complexity when too many categories have to be considered simultaneously. We, therefore, do not adopt the strategy of simply presenting a large battery of indicators. However, as 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), the IEWB is explicit and open about the relative weights assigned to components of well-being, rather than leaving them implicit and hidden. As well, for policy purposes it is not particularly useful to know only that well-being has gone "up" or "down", without also learning 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 own personal values about what is important in economic well-being, they would agree with an overall assessment of trends in the economy.<sup>2</sup>

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 resources – is consistent with a variety of theoretical perspectives. We, therefore, do not present here a specific, formal model. In a series of papers (Osberg and Sharpe, 1998, 2002, and 2005) we have already described the details of the calculation of the four components or dimensions of economic well-being:

- 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;
- net societal accumulation of stocks of productive resources which consists of net accumulation of physical capital plus accumulation of human capital plus changes in the value of natural resources stocks, net international investment position and R&D stocks, minus an adjustment for costs associated with environmental degradation;
- income distribution the intensity of poverty (incidence and depth) and the inequality of income;
- economic security from the financial consequences of job loss and unemployment, illness and family breakup, and from 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

<sup>&</sup>lt;sup>2</sup> Sensitivity analysis is omitted from this report on the IEWB for Newfoundland and Labrador. See the forthcoming CSLS report on the IEWB for Canada, 1981 to 2018, for sensitivity analysis for Canada and the provinces.

(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 net changes in the public capital stock, human capital, research and development and the value of unpriced environmental assets) is always optimal, and
- (2) set the weight of income distribution and economic insecurity to zero, by ignoring entirely their influence.

These assumptions do not seem justifiable, and they are not 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 3 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. For illustrative purposes, we present below trends in the aggregate IEWB when each of the four components (Current Average Consumption, Net Accumulation, Economic Security and Inequality) receives equal weight. The data for each component are also available in an online EXCEL file at <u>www.csls.ca</u>. It is straightforward to alter the weights assigned to each component and to calculate what difference, if any, that makes for trends in the IEWB.

### Exhibit 3: CSLS Index of Economic Well-being, Weighting Tree for Canada and the Provinces



Source: CSLS

### II. Overall Trends in the Index of Economic Well-being

The Index of Economic Well-being (IEWB) is comprised of four domains of economic well-being: consumption flows, stocks of wealth, economic equality, and economic security. This section examines the overall trends in the IEWB and its four domains in New Brunswick from 1981 to 2019. The next four sections look at each domain in depth, analyzing developments in the components and subcomponents.<sup>3</sup>

### A. Index of Economic Well-being

In 2019, the Index of Economic Well-being for New Brunswick scored 0.477, ranking ninth in Canada (Chart 1). Moreover, New Brunswick was in third place compared to the other Atlantic provinces.





The IEWB for New Brunswick increased 0.190 points from 0.288 in 1981 to 0.477 in 2019 (Chart 2). On the other hand, Canada's IEWB increased only 0.113 points over the 1981-2019 period, from 0.442 in 1981 to 0.555 in 2019.

The province's overall index grew more significantly than Canada's over the period; the IEWB for Canada increased 0.113 points from 0.442 in 1981 to 0.555 in 2019.

The IEWB for New Brunswick relative to Canada's also experienced impressive growth, increasing 16 percentage points from 69.1 per cent of Canada's IEWB in 1981 to 85.9 per cent in 2019 (Chart 2).

Source: IEWB Database 2019, Table 9

<sup>&</sup>lt;sup>3</sup> The complete excel database for Canada and the provinces is publicly available on the CSLS website. Refer to the database posted with this report.







Panel B: Relative to Canada

Source: IEWB Database 2019, Table 9

The IEWB is a much broader and, many argue, more meaningful metric of economic well-being than real GDP per capita. Consequently, it is useful to compare trends in the two measures (Chart 3). Over the 1981-2019 period, GDP per capita in New Brunswick grew 1.24 times faster than the rate of the IEWB for the province (1.60 per cent versus 1.34 per cent per year). One notes that the GDP per capita stands out more often than the IEWB whether it is rising or falling. Moreover, the magnitude of these variations differs greatly from one period to another. For example, during the 2000-2008 period, the GDP per capita grew 3.4 times faster than the IEWB, while for the 2008-2019 period, it was the IEWB that showed a surprising increase, growing 6.2 times faster than the GDP per capita. During the decrease in 2008-2014, it was the GDP per capita that showed a greater decrease by being 2.3 times lower than the IEWB. However, over the last four years of the analysis period, the IEWB registered the only time when it had the largest increase (0.9 points higher than the GDP per capita). Finally, the only period where a similar increase for both parameters was observed was between 1981-2000.



Chart 3: Compound Annual Growth Rates of the Index of Economic Well-being and GDP per Capita in New Brunswick, 1981-2019

Exhibit 4 shows the rankings of Canada and the provinces by the levels and growth rates of the Index of Economic Well-being and GDP per capita. One notes that the province ranked ninth in both the IEWB level and GDP per capita. In terms of growth, New Brunswick made strong progress, ranking third for the IEWB and third for GDP per capita for the 1981-2019 period.

Provinces					
	Levels in 2019	)	Growth Rate, 1981-2019		
Rank	Index of Economic Well- being	GDP per Capita	Index of Economic Well- being	GDP per Capita	
1	British Columbia	Alberta	Newfoundland and Labrador	Newfoundland and Labrador	
2	Newfoundland and Labrador	Saskatchewan	Prince Edward Island	Prince Edward Island	
3	Alberta	Newfoundland and Labrador	New Brunswick	New Brunswick	
4	Ontario	Canada	Quebec	Nova Scotia	
5	Canada	Ontario	British Columbia	Saskatchewan	
6	Quebec	British Columbia	Manitoba	Manitoba	
7	Manitoba	Manitoba	Canada	Quebec	

Exhibit 4: Ranking by Index of Economic Well-being and Per-Capita GDP, Canada and the Provinces

Source: IEWB Database 2019, Table 9

8	Prince Edward Island	Quebec	Nova Scotia	Canada
9	New Brunswick	New Brunswick	Ontario	Ontario
10	Saskatchewan	Nova Scotia	Saskatchewan	Alberta
11	Nova Scotia	Prince Edward Island	Alberta	British Columbia

### **B.** The Four Domains of the IEWB

During the 1981-2019 period, the IEWB in New Brunswick grew at a rate of 1.34 percent per year (Chart 4). The consumption domain had the highest annual growth among the four domains of the IEWB (4.31 percent), followed by the economic equality (1.81 percent). The two other domains fell in absolute terms at a rate of -0.24 percent for the wealth domain and at a rate of -0.27 percent for the economic security.

In other words, the improvement in the Index of Economic Well-being between 1981 and 2019 was primarily driven by improvements in the consumption and wealth domain (Chart 4). The consumption domain increased by 0.502 points, while the economic equality rose 0.322 points over the period. The domains of economic security and the wealth have slightly fell off. The index of economic security was almost identical with the 1981 level, as for the wealth domain, there is a minimal difference of 0.017.



Chart 4: Domains of the Index of Economic Well-being in New Brunswick, 1981 and 2019

For the overall period, it can be noted that the consumption domain recorded the highest growth (4.31 percent per year), followed by the domain of economic equality (1.81 percent per year). In contrast, the other two domains (wealth and economic security) experienced small declines (-0.24 percent and -0.27 percent respectively).

Source: IEWB Database 2019, Table 9

Looking at the periods 1981-2000 and 2000-2019, there was a large fall-off in the annual growth of IEWB. In the second period, IEWB growth was almost a quarter of the IEWB growth in the first period (0.4 percent versus 2.25 percent). This can be explained by the fact that while in 1981-2000 all components had positive growth, between the two periods, all domains experienced slowdowns and some even fell in absolute terms in the second period. The consumption domain had the largest drop (-5.26 percent points), followed by the domain of economic equality (-1.62 percent points) and finally the domains of wealth and security, which fell in absolute terms.

Subsequent periods, 2000-2008 and 2008-2019, showed similar annual growth rates for the IEWB (0.62 percent versus 0.3 percent), although between periods there have been large differences in the growth of all components. While in the first period, three of the four components had negative growth with strong growth for consumption (3.83 percent), in the second period only the wealth domain had negative growth. Between 2000-2008 and 2008-2019, it was the consumption domain that had the largest reduction between periods (-3.6 points), while the wealth domain had a less pronounced reduction in growth (1 points). In contrast, on can note an increase between periods in the economic equality (0 versus 1.8) and the economic security (-1.21 versus -0.5).

Finally, the IEWB growth (0.3 percent) recorded in 2008-2019 is inconsistent with the IEWB growth observed in the two sub-periods 2008-2014 and 2014-2019, since for the first period there is a negative growth (-0.3 percent), while for the second period there is a positive growth (1 percent). The improvement in the second period was due on one hand because the consumption domain experienced positive growth of 1.3 points compared to the other earlier periods analysed and on the other hand because the domains of wealth and economic equality had an impressive acceleration in growth of 4 points (-3.7 versus 0.3), 2.96 points (0.44 versus 3.4)

	1981-2019	1981-2000	2000-2019	2000-2008	2008-2019	2008-2014	2014-2019
	Per Cent						
Index of Economic Well-being	1.34	2.25	0.4	0.6	0.3	-0.3	1
Consumption Flows (Scaled)	4.31	6.96	1.7	3.8	0.2	0.4	0
Stocks of Wealth (Scaled)	-0.24	1.04	-1.5	-0.9	-1.9	-3.7	0.3
Index of Economic Equality	1.81	2.62	1	0	1.8	0.4	3.4
Index of Economic Security	-0.27	0.28	-0.8	-1.2	-0.5	-0.5	-0.6

 Table 1: Compound Annual Growth in the Domains of the Index of Economic Well-being in New Brunswick, 1981-2019

Source: IEWB Database 2019, Table 9

### **III.** Trends in the Consumption Flows Domain

This section examines the components of consumption flows. The consumption domain consists of three components: personal consumption expenditures, government expenditures on goods and services, and unpaid work. The consumption domain is adjusted by three factors. First, personal consumption expenditures are adjusted for family size to account for the economies of scale that exist in private household consumption. Second, regrettable expenditures—those that do not increase well-being—are subtracted from total consumption flows. Lastly, the percent increase in life expectancy is applied to total consumption flows to adjust for the positive impact of increased life expectancy.

Chart 5 shows the levels of consumption components for New Brunswick in 2012 constant dollars per capita in 1981, 2000, 2008, 2014, and 2019. In every year, personal consumption constituted the largest share of total consumption, followed by either government expenditures or unpaid work.



Chart 5: Components of the Consumption Domain in New Brunswick, 1981, 2000, 2008, 2014 and 2019

Source: IEWB Database 2019, Table 1

### A. Personal Consumption

In 2019, personal consumption (unadjusted) per capita in New Brunswick was \$29,419<sup>4</sup>, which constituted 60 percent of total consumption. Among the provinces, New Brunswick ranked eight in terms of personal consumption per capita (Chart 6). British Columbia had the highest personal consumption per capita of the provinces at \$34,657 per capita, exceeding New Brunswick's by 17.8 per cent.





New Brunswick experienced a growth in personal consumption per capita between 1981 and 2019 (Chart 7). During this period, personal consumption per capita in the province increased by 2.1 per cent per year (Table 3, Panel C). In comparison, Canada's personal consumption grew less (1.7 per cent) annually over the period. Personal consumption grew rapidly during the 2000-2008 period at 2.9 per cent per year. Despite its substantial growth over the period, personal consumption in New Brunswick has never reached the national value. However, by the end of the period, New Brunswick's personal consumption per capita represented 93.0 percent of Canada's per capita personal consumption level (Table 3, Panel B).

Source: IEWB Database 2019, Table 1

<sup>&</sup>lt;sup>4</sup> All monetary values are expressed in 2012 constant dollars.



Chart 7: Personal Consumption Per Capita in New Brunswick and Canada, 1981-2019

Source: IEWB Database 2019, Table 1

### **B.** Average Family Size

As noted previously, personal consumption must be adjusted for family size to reflect economies of scale in household consumption. When people live together in groups rather than individually, they can achieve greater effective consumption.<sup>5</sup> To account for this issue, we use the Luxembourg Income Study equivalence scale, which is the square root of family size.<sup>6</sup>

In 2019, the average family size in New Brunswick was 2.26 persons, which was slightly lower than the national average of 2.35 persons (Chart 8). In contrast, in 1981, the province's average family size of 3.02 persons exceeded Canada's at 2.72 persons. Between 1981 and 2019, the average family size in the New Brunswick had a negative growth of -0.76 percent per year and Canada a negative growth of -0.38 per cent per. Consequently, New Brunswick's average family size in 1981 was 111.1 percent of Canada's average family size and in 2019 it was 96.1 percent of the national average, reflecting in this way the fall (Table 3, Panel B).

The decline in family size in the province over the period was likely driven by a rise in single persons living alone, falling birth rates, an exodus of working-age people with families, and a rapidly aging population. A smaller average family size, however, dampens the ability of households in the province to reap the aforementioned economies of scale in consumption and

<sup>&</sup>lt;sup>5</sup> For example, they can cooperate in household production (e.g. one person can cook for the household) and share fixed costs (e.g. the household shares one refrigerator rather than each person buying one).

<sup>&</sup>lt;sup>6</sup> "Family" is categorized into two types: '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,' which are persons either living alone or sharing a dwelling with persons to whom they are unrelated. It should be noted that unattached individuals living together (i.e. roommates) enjoy many benefits of economies of scale in household consumption. However, as the data used in this report considers roommates as separate families, our adjustment for family size does not capture these benefits. Although our estimates are underestimated, the issue is minor.

decelerates the province's total adjusted personal consumption growth (in 1981-2000 the total adjusted personal consumption growth was 2.25 per cent per year, but in 2014-2019 it was only 1.1 per cent per year).



Chart 8: Average Economic Family Size in New Brunswick and Canada, 1981-2019

Source: IEWB Database 2019, Appendix Table 2

### **C.** Government Expenditures

The IEWB defines government expenditures per capita as spending by all levels of government on current goods and services and on fixed capital and inventories<sup>7</sup>, minus capital consumption allowances.<sup>8</sup>

In 2019, New Brunswick spent 13,760 per capita on government expenditures (Chart 9). Government expenditures represented the second largest share of total consumption flows at 28 per cent. Among the provinces, New Brunswick ranked third in terms of government expenditures per capita. The Atlantic Provinces, except for Prince Edward Island, had the highest levels of per-capita government expenditures. Nova Scotia topped the rankings at \$15,384 per capita, while Newfoundland and Labrador exceeded New Brunswick with \$14278 per capita.

<sup>&</sup>lt;sup>7</sup> The inventory investment represents a small amount and could be subtracted.

<sup>&</sup>lt;sup>8</sup> Capital consumption allowances for government capital expenditure data are not available post-2009. The values for 2010 through 2018 are extrapolated using the compound average annual growth rate from 2004 to 2009.



Chart 9: Government Expenditures per capita by Province, 2019

Government expenditures in New Brunswick have had a relatively constant ascent with only a few variations between 1981 and 2019 (Chart 10). The province saw an annual increase of 1.07 per cent (Table 2, Panel B).

At the national level, government expenditures grew much slower; Canada's government expenditures increased at a modest rate of 0.6 per cent per year over the period. Consequently, government expenditures in New Brunswick surpassed Canada's in 1987, remaining above the national value for the rest of the period. Explained another way, government expenditures in 1981 were 97.7 percent of Canada's per capita government expenditures and in 2019 they were 116.8 percent (Table 3, Panel B).

Source: IEWB Database 2019, Table 1



Chart 10: Government Expenditures per Capita in New Brunswick and Canada, 1981-2019

Source: IEWB Database 2019, Table 1

Table 2 shows the absolute values of each sub-component of total government expenditures, as well as the annual growth rates in several periods.

Looking at the Panel B related to the compound annual growth rates for the overall period of 1981-2019, it can be noted that all the growths of the components that make up government expenditure per capita are positive and that some growth rate are relatively similar, such as the fixed capital and inventories growth (2.07 per cent per year) and the capital consumption allowance growth (2.49 per cent per year), while the growth of government expenditures (1.07 per cent per year) is slightly lower than the two others.

From 1981-2000 to 2000-2019 sub-periods, the growth in total government expenditures per capita has slowed down being caused by the drop in growth of government expenditures (1.53 percent versus 1.07 percent), but also the more pronounced drop in growth of fixed capital and inventories (4.00 percent versus 0.18 percent).

During the periods 2000-2008 and 2008-2019, growth in total government expenditures per capita fell (from 1.93 percent to 0.72 percent) although two of its components grew. Fixed capital inventories grew by 3.51 percentage points (-1.84 percent to 1.67 percent) and the capital consumption allowance grew by 1.56 percentage points (2.70 percent to 4.26 percent). However, it is the government expenditures that deteriorated by 1.26 percentage points (1.34 percent to 0.08 percent).

Finally, for the last two sub-periods from 2008-2014 to 2014-2019, it can be noted that for the first period, the growth of the three components slowed-down in relation to the 2008-2019 period, with even negative growth (government expenditures having -0.61 percent). Consequently, the total government expenditures per capita fell in absolute terms (-1.08 percent). In 2014-2019, all the growths of the components increased compared to 2008-2014, which

allowed for an increase in total government expenditures per capita of 2.57 percentage points (-1.08 percent to 1.49 percent).

	1981	2000	2008	2014	2019				
	Millions of 2012\$								
Government Expenditures	6,353	8,425	9,821	9,467	10,632				
Fixed Capital and Inventories	751	1,582	1,364	1,516	1,637				
Capital Consumption Allowance	619	806	998	1,282	1,579				
			2012\$ per Capita						
Government Expenditures <b>per</b> capita	8,993	11,226	13,149	12,473	13,760				
Fixed Capital and Inventories <b>per</b> <b>capita</b>	1,063	2,108	1,826	1,997	2,461				
Capital Consumption Allowance <b>per</b> <b>capita</b>	876	1,074	1,336	1,689	1,966				
	2012\$ per Capita								
Total Government Expenditures per capita	9,179	12,259	13,640	12,782	13,760				

 Table 2: Sub-Components of Government Expenditures per capita in New Brunswick, 1981-2019

 Panel A: Absolute Values

### **Panel B: Compound Annual Growth Rates**

	1981-2019	1981-2000	2000-2019	2000-2008	2008-2019	2008-2014	2014-2019
	Per Cent						
Government Expenditures	1.36%	1.50	1.23%	1.93	0.72%	-0.61	2.35%
Fixed Capital and Inventories	2.07%	4.00	0.18%	-1.84	1.67%	1.78	1.55%
Capital Consumption Allowance	2.49%	1.40	3.60%	2.71	4.26%	4.26	4.26%
Total Government Expenditures per capita	1.07%	1.53	0.61%	1.34	0.08%	-1.08	1.49%

Source: IEWB Database 2019, Appendix Table 6

### **D. Unpaid Work**

Statistics Canada (1995) classifies unpaid work into five major categories:

- 1) Domestic work, which includes meal preparation, cleaning, clothing care, repairs and maintenance, and other domestic work
- 2) Help and care, for children and adults
- 3) Management and shopping
- 4) Transportation and travel
- 5) Volunteer work

As data are not available on the value of unpaid work, we calculate the monetary value of this component based on a number of assumptions. First, estimates of hours of unpaid work per capita performed by working aged persons (persons 15 years of age or older) in the years 1981, 1986, and 1992 are taken from Statistics Canada (1995), and from Statistics Canada's General Social Survey for the years 1998, 2005, 2010, and 2015. As the survey is only performed every five years, we interpolate the hours worked in any given year between surveys by multiplying the hours of the previous year by the growth rate implied for its five-year period by the Statistics Canada data. For years after the last survey, we extrapolate the hours worked using the growth rate of the previous five-year period. Second, to estimate the value of these hours, we use data for the total value of unpaid work per year from Statistics Canada (1995) for the years 1981, 1986, and 1992, which uses a generalist replacement wage. To calculate the values after 1992, we multiply the hours worked by the total labour compensation per hour for the total economy (which we refer to as 'wages') in constant dollars for that year.<sup>9</sup>

In 2019, the value of unpaid work per capita in New Brunswick was \$10,839, which constituted 22.12 per cent of total consumption flows (Chart 11). Among the provinces, New Brunswick had the third to last value of unpaid work. All four Atlantic provinces ranked below the Canadian average. In 1981, New Brunswick's per capita unpaid work represented 70.05 percent of Canada's per capita unpaid work level and in 2019, 76.5 percent (Table 3, Panel B).

<sup>&</sup>lt;sup>9</sup> The values of hours after 1992 are extrapolated using the growth rate of real wages over the 1992-2018 period. The wage in a given year is calculated by multiplying the wage of the previous year by the change in the index of labour compensation, which are taken from Statistics Canada's Labour Productivity Measures Survey and deflated by CPI.



Chart 11: Value of Unpaid Work per capita by Province, 2019

Source: IEWB Database 2019, Table 1

The value of unpaid work per capita in New Brunswick increased between 1981 and 2019 (Chart 12). Over the period, the value of unpaid work per capita in the province grew by 1.43 per cent per year, though it never reached Canada's value of unpaid work except for 1986. This growth was higher than Canada's over the period. The national value of unpaid work per capita increased at an annual rat of 1.19 over the period.

Despite the overall increase, the value of unpaid work in New Brunswick experienced a downward trend after peaking in 2010 at \$13,151 per capita (Chart 12). During the 1981-2000 period, the value of unpaid work grew at a robust 3.09 per cent per year; however, during the 2000-2019 period, it fell by 0.20 per cent per year. This negative growth was most concentrated towards the end of the period. Between 2014 and 2019, the value of unpaid work decreased by 2.5 per cent annually (Table 3, Panel C).



Chart 12: Value of Unpaid Work per Capita in New Brunswick and Canada, 1981-2019

Source: IEWB Database 2019, Table 1

Changes in the per-capita value of unpaid work reflect trends in three factors: the generalist replacement wage, the working-age population, and hours of unpaid work.

The unpaid wage rate and working-age population both increased between 1981 and 2019 in New Brunswick, contributing to the growth in the province's value of unpaid work. The unpaid wage rate increased by 1.55 percent per year from \$7.28 in 1981 to \$13.05 in 2019 in 2012 dollars, though it remained well below the Canadian wage, apart from the low overrun in 1986 (Chart 13). The working-age population increased between 1981-2019 by 0.57 per cent annually (from 517,000 to 642,7000).

In terms of unpaid hours, there was a sharp increase from 1987 to 1998 and then a plateau until 2011, when a clear downward trend was observed. (Chart 14). The hours of unpaid work grew at a slow rate of 0.134 percent per year (from 613 million hours in 1981 to 645 million hours in 2019).



Chart 13: Unpaid Work Wage Rate in New Brunswick and Canada, 1981-2019

Source: IEWB Database 2019, Appendix Table 5-1 & 5-5





Source: IEWB Database 2019, Appendix Table 5-5

### **E. Regrettable Expenditures**

Although most expenditures increase economic well-being, some — known as regrettable expenditures — are spent to prevent or ameliorate undesirable outcomes. As people would be better off if such expenditures were not necessary, these expenditures represent a reduction in well-being. This report defines regrettable expenditures as the cost of commuting (including traveling and time costs), the cost of crime (such as security measures and repairing damaged property), the cost of household pollution abatement (including expenses on devices to improve air and water quality in the home), and the cost of automobile accidents (including repair costs

and medical and legal expenses). As the sum of these costs does not contribute to or may actively detract from well-being, regrettable expenditures are subtracted from total consumption flows.<sup>10</sup>

In 2019, regrettable expenditures in New Brunswick were \$5029 per capita (Chart 15).<sup>11</sup> Compared to the other provinces, New Brunswick fared modestly, ranking eight. The provinces with the most regrettable expenditures, however, did not exceed Manitoba by a large margin. British Columbia, which had the highest regrettable expenditures per capita, surpassed New Brunswick by \$895 or 17.7 per cent.





Regrettable expenditures in New Brunswick increased continuously during the 1981-2019 period (Chart 16). Regrettable expenditures rose 2.93 per cent annually. Although regrettable expenditures in the province never exceeded the Canadian average during the period, their growth rates were larger than Canada's. Regrettable expenditures in Canada increased over the period, at a rate of 2.47 per cent annually. By 2019, New Brunswick was close to reaching Canada's regrettable expenditures of \$5,404 per capita. In other terms, in 1981, New Brunswick's regrettable expenditures per capita represented 78.4 percent of Canada's per capita regrettable expenditures and in 2019, 93.0 percent (Table 3, Panel B).

Source: IEWB Database 2019, Table 1

<sup>&</sup>lt;sup>10</sup> For further discussion on methodologies, see Wong (2020) for a report on the concept of regrettable expenditures.

<sup>&</sup>lt;sup>11</sup> Estimates of regrettable expenditures for the 1981-94 period are from Messinger (1997). Estimates after 1994 are extrapolations based on the assumption of constant growth rates. Furthermore, estimates for the provinces were calculated by multiplying personal expenditures by Canada's ratio of regrettable expenditures to personal expenditures.

Regrettable expenditures in the province grew more significantly after 2000. Between 1981 and 2000, the growth rate was 2.45 per cent per year, lower than the annual growth rate of 3.42 per cent between 2000- 2019. Interestingly, this higher growth was mostly concentrated in the 2008-2014 sub-period, which saw annual growth of 3.77 per cent. Between 2014 and 2019, growth slowed to 3.48 per cent per year, though it remained positive and substantial (Table 3, Panel C).



Chart 16: Regrettable Expenditures per capita in New Brunswick and Canada, 1981-2019

Source: IEWB Database 2019, Table 1

### **F.** Life Expectancy

Life expectancy is the final adjustment to consumption. Total consumption flows are multiplied by an index of life expectancy, as an increase in longevity increases total consumption flows.<sup>12</sup>

In 2019, life expectancy at birth in New Brunswick was 80.8 years, 6 years more than the 1981 level of 75.0 years (Chart 17). Between 1981 and 2019, life expectancy barely advanced at a rate of 0.19 per cent per year. Life expectancy in Canada rose 0.23 per cent annually from 1981 to 2019, reaching 82.4 years by the end of the period.

However, despite increasing since 1981, life expectancy in New Brunswick remained slightly below the Canadian average throughout the period (Chart 17) and moreover starting from 2013, Canada's life expectancy curve had a higher gap. In 1981, New Brunswick's life expectancy at birth represented 99.3 percent of Canada's life expectancy at birth and in 2019, 98.0 percent (Table 3, Panel B).

<sup>&</sup>lt;sup>12</sup> Calver (2016) estimates that approximately 41 per cent of the improvement in Canada's standards of living from 2000 to 2011 can be attributed to changes in life expectancy. Therefore, we may be underestimating the impact of the benefits of increased life expectancy on overall economic well-being.


Chart 17: Life Expectancy at Birth in New Brunswick and Canada, 1981-2019

Source: IEWB Database 2019, Appendix Table 3

### **G. Total Consumption Flows**

To calculate total per-capita consumption, we sum family size-adjusted personal consumption, government expenditures on goods and services, and unpaid work, then subtract regrettable expenditures. Finally, we adjust the total for the increase in life expectancy. This adjusted total consumption is scaled to generate the index of the consumption domain of the overall Index of Economic Well-being.<sup>13</sup>

In 2019, total adjusted consumption flows in New Brunswick was 49,633 per capita, while its index of the consumption domain was 0.629 (Chart 18). Among the provinces, New Brunswick ranked third to last. The other Atlantic provinces similarly ranked below the Canadian average. Alberta had the highest per-capita total consumption flows with \$57,105 per capita and a score of 0.799, which were significantly higher than New Brunswick's.

<sup>&</sup>lt;sup>13</sup> To calculate the scores for the index of the consumption domain, we apply a linear scaling procedure to the total adjusted consumption flows for each province. This scaling procedure does not affect the rankings of the provinces.



Chart 18: Total Consumption (Adjusted) per Capita by Province, 2019 Panel A: Per Capita







Although New Brunswick had the lowest per-capita total consumption flows and never reached Canada's level during the period, the province saw a considerable improvement in the consumption domain between 1981 and 2019 (Chart 19). Over the period, total consumption flows per capita grew 1.56 per cent annually from its 1981 level of \$27,472 per capita. This improvement was more impressive than Canada's, which experienced an increase of 1.32 per cent per year. In 1981, New Brunswick's per capita total consumption adjusted represented 83.2 percent of the national average and 91 percent in 2019 (Table 3, Panel B).



Chart 19: Total Consumption Flows per Capita in New Brunswick and Canada, 1981-2019



#### **Panel B: Scaled**

Source: IEWB Database 2019, Table 1

Table 3 summarizes the overall findings for the consumption domain in New Brunswick.

Between 1981 and 2019, each component of the consumption domain increased in value. Unadjusted personal consumption and regrettable expenditures are the components that stand out the most, having more than doubled over the period under study. The only sub-component that has declined is the family size adjustment, which shows a significant drop in value in 2019 compared to 1981. Taking into account that the index of life expectancy increases over the years,

total consumption also increases (in 1981 total consumption adjusted was \$27,472 and in 2019 \$49,633).

As regards the annual growth rates, it can be noted that most variables had growth rates that fell over the period ending with lower growth rates at the end of the period compared to the beginning of the period. The only variables that had higher growth at the end of the period than at the beginning of the period were the index of square root of family size (-0.52 percent versus - 0.25 percent), government expenditures (1.53 percent versus 0.61 percent) and regrettable expenditures (2.45 percent versus 3.42).

For the period 1981-2019, all variables had positive growth, except for the index of square root of family size which had negative growth throughout the following periods.

Between 1981-2000 and 2000-2019, almost all variables had large slow-downs, e.g. the largest slow-down was for the total consumption (scaled) by 5.08 percent points (6.96 percent versus 1.73 percent). The index of square root of family size which remains with negative growth had a rise in its growth (-0.51 percent versus -0.26 percent) and the regrettable expenditures had stronger growth in the second period (2.45 percent versus 3.41 percent).

In the periods 2000-2008 and 2008-2019, the same parameters experienced slowdowns and total consumption (scaled) had again the strongest slowdown of 3.61 percent points (3.83 percent versus 0.22 percent).

For the last two periods, 2008-2014 and 2014-2019, the differences with the previous periods are that government expenditures increased and even went from a negative to a positive growth (-1.08 percent versus 1.49 percent), the regrettable expenditures also fell off by 0.29 percent points (3.77 percent versus 3.48 percent) and unpaid work deteriorated the most by 2.09 percent points (-0.41 percent to -2.50 percent).

	1981	2000	2008	2014	2019				
		2012\$ per Capita							
Personal Consumption	13 131	20 147	25 285	27.830	29.419				
(Unadjusted)	15,151	20,147	25,205	27,050	27,417				
Family Size Adjustment	708	-882	-1,927	-2,345	-2,568				
Personal Consumption									
(Adjusted)	13,839	19,265	23,359	25,485	29,419				
Government									
Expenditures	9,179	12,259	13,640	12,782	13,760				
Unpaid Work	6,314	11,256	12,612	12,302	10,839				
Regrettable									
Expenditures	-1,677	-2,655	-3,396	-4,239	-5,029				
Total Consumption									
(Unadjusted)	27,655	40,126	46,214	46,330	49,633				
Life									
Expectancy									
Adjustment	-183	1,807	2,754	3,314	3,391				
Total Consumption									
(Adjusted)	27472	41932	48969	49644	53024				

Table 3: Summary of Consumption Components in New Brunswick, 1981-2019Panel A: Per Capita

### Panel B: Relative to Canada

	1981	2000	2008	2014	2019				
		Per Cent of Canada's							
Personal									
Consumption	78.4	89.4	91.4	93.7	93.06				
(Unadjusted)									
Average Family	111.1	101.0	07.0	06.8	06.1				
Size (persons)	111.1	101.0	97.0	90.8	90.1				
Government	07 7	117.0	112.3	100.0	116.8				
Expenditures	97.7	117.0	112.3	109.0	110.8				
Unpaid Work	70.1	76.7	76.5	75.7	76.5				
Regrettable	70 /	80.4	01.4	02.7	02.0				
Expenditures	/0.4	89.4	91.4	95.7	95.0				
Life Expectancy	00.2	00.6	00.0	08.0	08.0				
(years)	99.5	99.0	99.0	90.9	98.0				
Total									
Consumption									
(Adjusted)	83.2	91.6	90.0	89.7	91.09				

	1981-2019	1981-2000	2000-2019	2000-2008	2008-2019	2008-2014	2014-2019			
		Per Cent								
Total Consumption (Adjusted)	1.56	2.25	0.89	1.96	0.12	0.23	0			
Total Consumption (Scaled)	4.30	6.96	1.73	3.83	0.22	0.41	-0.01			
Index of Life Expectancy	0.20	0.27	0.12	0.17	0.09	0.19	-0.03			
Personal Consumption (Unadjusted)	2.15	2.28	2.01	2.88	1.39	1.61	1.12			
Index of Square Root of Family Size	-0.38	-0.52	-0.25	-0.37	-0.16	-0.25	-0.05			
Government Expenditures	1.07	1.53	0.61	1.34	0.08	-1.08	1.49			
Unpaid Work	1.43	3.09	-0.2	1.43	-1.37	-0.41	-2.5			
Regrettable Expenditures	2.93	2.45	3.42	3.13	3.63	3.77	3.48			

**Panel C: Compound Annual Growth Rates** 

Source: IEWB Database 2019, Table 1

# IV. Trends in the Stocks of Wealth Domain

Society's stocks of wealth—both human-made and natural—determine the sustainability of its current level of consumption. The wealth domain could, therefore, also be called the sustainability domain. This section examines the five main components of the wealth domain: physical capital stock, R&D stock, the stock of natural resources, net international position, and human capital. The sum of the five components is adjusted to account for the social costs of environmental degradation by subtracting the estimated annual accumulated cost of greenhouse gas emissions from the total stock of wealth.

Chart 20 shows the components of the wealth domain for New Brunswick in 1981, 2000, 2008, 2014, and 2019.



Chart 20: Components of the Stocks of Wealth Domain for New Brunswick in 1981, 2000, 2008, 2014, and 2019

Source: IEWB Database 2019, Table 2

## **A. Physical Capital**

The Index of Economic Well-being defines net capital stock as residential and nonresidential capital stock (both of them expressed in 2012\$ constant dollar) based on geometric depreciation.

In 2019, New Brunswick had a net capital stock of \$85,366 per capita (Chart 21), which represented 52.5 percent of its total wealth. Compared to the rest of Canada, the province ranked second to last. In contrast, Newfoundland ranked second and Nova Scotia and Prince Edward Island, the other Atlantic provinces, ranked along with New Brunswick at the bottom of the rankings.



Chart 21: Net Capital Stock per Capita by Province, 2019

The province's net capital stock per capita grew between 1981-2019 at a rate of 1.48 per cent annually, compared to Canada's 1.43 per cent annually over the period (Chart 22). In 1981, New Brunswick's per capita net capital stock was 69.5 percent of the average national. In 2019 it represented 70.7 percent of Canada' per capita net capital stock (Table 7, Panel B). New Brunswick's growth in net capital stock per capita was stronger in the latter half of the period; per-capita net capital stock grew 1.25 per cent annually in the 1981-2000 sub-period, but increased even faster in the 2000-2019 sub-period at 1.72 per cent per year. It grew the fastest from 2000 to 2008 at 2.95 per cent annually (Table 7, Panel C).

Source: IEWB Database 2019, Table 2



Chart 22: Net Capital Stock per Capita in New Brunswick and Canada, 1981-2019

Source: IEWB Database 2019, Table 2

Net capital stock per capita in New Brunswick has consistently comprised a larger share of non-residential capital than residential. In 2019, residential capital and non-residential capital were almost at the same level (\$32,590 million versus \$33,728 million respectively). Residential capital had a growth rate of 2.90 percent per year from 1981-2019, while the growth of non-residential capital was only 0.95 percent per year for the same period. The annual growth of residential capital was stronger than the growth of non-residential capital during all periods.

The highest growth for both types of capital was in the 2000-2008 subperiod (3.89 percent versus 2.17 percent). During the 2014-2019 subperiod, both types of capital had the lowest growth of all subperiods, the growth of non-residential capital even fell in absolute terms (-0.11 percent), which caused the lowest growth in total net capital stock (0.24 percent per year) of all subperiods combined.

<b>Table 4: Sub-Components of</b>	of Net Capital Stock	per Capita in New	Brunswick, 1981-2019
1	1	1 1	,

	1981	2000	2008	2014	2019		
			Millions of 2012\$				
Non-Residential	23,469	27,531	32,690	33,910	33,728		
Residential	10,980	18,835	25,551	30,094	32,590		
		2012\$ per Capita					
Net Capital Stock (Total)	48,764	61,779	77,979	84,329	85,366		

**Panel: A: Absolute Values** 

	1981-2019	1981-2000	2000-2019	2000-2008	2008-2019	2008-2014	2014-2019	
				Per Cent				
Non- Residential	0.96	0.84	1.1	2.2	0.3	0.6	-0.1	
Residential	2.9	2.88	2.9	3.9	2.2	2.8	1.6	
Net Capital Stock (Total)	1.48	1.25	1.7	3	0.8	1.3	0.2	

Panel B: Compound Annual Growth Rates per Capita

Source: IEWB Database 2019, Appendix Table 7

## **B. R&D** Capital

In 2019, R&D stock in New Brunswick was \$946 per capita (Chart 23), which comprised the smallest share of total wealth at 0.58 per cent. New Brunswick ranked last of the ten provinces. With the exception of Newfoundland and Labrador, the other Atlantic provinces were also at the bottom of the rankings.

Also, in 1981, New Brunswick's per capita R&D stock was 44.2 percent of Canada's per capita R&D stock and in 2019, it was 47.9 percent (Table 7, Panel B).



Chart 23: R&D Stock per Capita by Province, 2019

Between 1981 and 2019, New Brunswick's R&D capital per capita grew 1.10 per cent per year (Chart 24). In contrast, Canada's R&D stocks per capita increased only by 0.88 per cent annually. Similar to net capital stock, New Brunswick's R&D stock grew the fastest in the 2000-2008 sub-period at 3.99 per cent annually. After 2008, the R&D stock started to have negative

Source: IEWB Database 2019, Table 2

growth and continued until 2019, the worst being in the 2008-2014 subperiod with -1.28 percent per year (Table 7, Panel C).



Chart 24: R&D Stock per Capita in New Brunswick and in Canada, 1981-2019

## **C. Natural Resources**

In 2019, the total value of natural resources in New Brunswick was \$16,298 per capita (Chart 25), which accounted for 10.02 per cent of total wealth. New Brunswick had the fifth highest level of natural resources among the provinces. The value of natural resources differed significantly across Canada. Prince Edward Island, for example, had the lowest value of natural resources at \$549 per capita, only 3 per cent of New Brunswick's.





Source: IEWB Database 2019, Table 2

Source: IEWB Database 2019, Table 2

The per capita value of natural resources in New Brunswick fell over the period (-0.22 percent per year) but experienced much volatility (Chart 26). From 1981-2000, growth in natural resources was strong, with a growth rate of 4.14 percent per year, peaking in 2000 at \$38,747 per capita. It was after 2000 that there were negative growth rates in most subperiods, the largest being between 2008-2014 with a decrease of 8.84 percent per year. At the end of the period, during the 2014-2019 subperiod, the growth of natural resources was the highest of all subperiods, at 2.93 percent per year (Table 7, Panel C).

Canada also experienced relatively stable though negative growth between 1981 and 2019, decreasing at an annual rate of 4.32 per cent. New Brunswick's per capita natural resources were 65.2 percent of Canada's per capita natural resources in 1981 and in 2019 they were 87.94 of Canada (Table 7, Panel B).



Chart 26: Natural Resources Stock per Capita in New Brunswick and in Canada, 1981-2019

We define the value of natural resources as the value of timber stocks, mineral resources, and energy resources.

The timber stocks per capita in constant dollars increased significantly between 1981-2019 (a growth rate of 4.49 percent per year) but fell considerably between 2000-2008 (-11.7 percent per year). After 2008, the growth rate became positive again and in 2014-2019 it was the highest of all periods (6.7 percent per year) (Table 5, Panel B).

Mineral resources per capita fell by more than half between 1981-2019 (\$2454per capita in 1981 and 1222 per capita in 2019). However, between 2000-2008, they had the strongest growth of 20.5 percent per year. After 2008 and up to 2019, mineral resources recorded strong fells in absolute terms (the largest between 2008-2014 of -26.65 percent per year) (Table 5, Panel B).

The energy resources per capita have constantly fallen over the period and in 2019 they had no value. Looking at the amounts in millions of current dollars, it can be noted that the

Source: IEWB Database 2019, Table 2

demand for energy resources was stable until 2014, but after that there was no value in 2019. This reduction was due to the decrease in energy prices (Table 5, Panel A).

These three sub-components of the natural resources play key roles in the province's economy. As a result, these sub-components were the main drivers behind the volatile trends in the value of natural resources in New Brunswick over the period.

 Table 5: Sub-Components of Total Natural Resources per Capita in New Brunswick, 1981-2019

 Panel A: Absolute Values

	1981	2000	2008	2014	2019			
		Mi	llions of Current doll	ars				
Timber Stocks	2,486	20,116	7,157	9,208	13,199			
Mineral Resources	2,223	1,997	8,799	1,225	1,222			
Energy Resources	196	250	260	260	0			
		2012\$ per Capita						
Timber Stocks	8,930	34,855	10,589	11,860	13,199			
Mineral Resources	7,986	3,459	13,018	1,578	1,222			
Energy Resources	703	433	384	334	0			
Natural Resources (Total)	17,619	38,747	23,991	13,772	16,298			

#### Panel B: Compound Annual Growth Rates per Capita (based on 2012 \$)

	1981-2019	1981-2000	2000-2019	2000-2008	2008-2019	2008-2014	2014-2019
				Per Cent			
Timber Stocks	4.49	0.12	-2.2	-11.7	5.4	4.3	6.7
Mineral							
Resources	-1.82	-0.01	-0.02	0.2	-0.16	-0.23	-0.02
Energy							
Resources	-100.00	-2.52	-100.00	-1.50	-100.00	-2.28	-100.00
Natural							
Resources							
(Total)	-0.22	0.04	-0.04	-0.05	-0.03	-0.08	0.02

Source: IEWB Database 2019, Appendix Table 10, 11, 12, & 13

### **D. Net International Investment Position**

In 2019, New Brunswick's net international investment position was estimated to be negative \$6308 per capita (Chart 27)<sup>14</sup> and it represented 77.2 percent of Canada's per capita net international investment (Table 7, Panel B). Among the provinces, New Brunswick ranked third.

<sup>&</sup>lt;sup>14</sup> No data are available on the provincial distribution of foreign assets and liabilities. We estimate provincial data by weighting the national value of the net international investment by provincial shares of national GDP, assuming that such assets and liabilities directly relate to the amount of economic activity in a province.

Newfoundland and Labrador was an outlier among the Atlantic region, as the three other Atlantic provinces had the lowest international debt per capita in Canada.



Chart 27: Net International Investment per Capita in New Brunswick and Canada, 2019

Between 1981 and 2019, New Brunswick improved its net international investment position (Chart 28). By 2019, the province decreased its international indebtedness by 28.3 per cent from its 1981 level of negative \$8,807 per capita. This improvement was mostly concentrated in the 2000-2019 sub-period. In particular, between 2008 and 2014, the province's net international investment position improved at a significant rate of 22.44 per cent per year (Table 7, Panel C).

Source: IEWB Database 2019, Table 2



Chart 28: Net International Investment per Capita in New Brunswick and Canada, 1981-2019

Source: IEWB Database 2019, Table 2

# **E. Human Capital**

The Index of Economic Well-being defines human capital as the accumulated private and public expenditures on education.<sup>15</sup> In 2019, the value of human capital in New Brunswick was \$173,871per capita (Chart 29), which was even higher than the total wealth of this province per capita (\$163,770). New Brunswick's per capita human capital represented 98.3 percent of Canada's per capita human capital in 2019 (Table 7, Panel B).

Compared to the other provinces, New Brunswick had relatively low human capital stock, ranking eight. The other Atlantic provinces, apart from Prince Edward Island, also ranked low in Canada in terms of human capital stock per capita.

<sup>&</sup>lt;sup>15</sup> The value of human capital is based on estimates of the cost of education in 2009/2010 and enrolment numbers from different years.



Chart 29: Human Capital Stock per Capita by Province, 2019

Human capital stock per capita in New Brunswick improved from 1981 to 2019, increasing 1.12 per cent per year from its 1981 level of \$113,806 per capita. The province's overall growth in human capital stock was almost the same as Canada's, which grew 1.11 per cent annually over the period. Human capital per capita in New Brunswick grew much faster in the 1981-2000 sub-period at 1.43 per cent per year than the post-2000 sub-period at 0.81 per cent per year (Table 7, Panel C).



Chart 30: Human Capital Stock per Capita in New Brunswick and Canada, 1981-2019

Source: IEWB Database 2019, Table 2

Source: IEWB Database 2019, Table 2

All increases in absolute numbers in human capital are due to the increase in spending for post-secondary certificate/diploma and for university degree (Table 6).

Between 1981 and 2019, the growth rates of post-secondary and university education increased at an annual rate of 4.12 per cent and 3.32 per cent, respectively. However, the growth in spending at the post-secondary level and in university degree were stronger between 1981-2000 period (7.01 percent per year for the post-secondary and 3.31 percent for the university degree) than between 2000 and 2019 (1.3 percent per year for the secondary and 3.3 percent for the university degree), which in turn led to slower growth in total human capital during the second period (0.81 percent versus 1.43 percent).

Although between 1981-2000 and 2000-2019, investment in post-secondary education and investment in university education fell, the latter was higher in the second period relative to post-secondary education (3 percent versus 0.9 percent), even though in the first period it was the opposite.

In contrast, the growth of primary and secondary education decreased in absolute terms over the years, driving down the growth rate of total human capital.

Panel A: Absolute Values							
	1981	2000	2008	2014	2019		
			Billions of 2012\$				
0-8 Years	16.88	9.85	7.12	5.25	4.88		
Some Secondary Education	34.69	15.74	13.08	11.93	11.10		
Graduated from High School	N/A	19.89	20.48	23.49	24.55		
Some Post- Secondary	6.75	8.45	8.88	7.14	6.84		
Post-Secondary Certificate/Diploma	9.65	34.96	40.55	43.59	44.69		
University Degree	12.43	23.08	31.35	35.93	42.99		
Human Capital (Total)	80.40	111.96	121.46	127.33	135.075		
	2012\$ per Capita						
Human Capital (Total)	113,806	149,175	162,628	167,768	173871.490		

### Table 6: Sub-components of Human Capital per Capita in New Brunswick, 1981-2019

	1981-2019	1981-2000	2000-2019	2000-2008	2008-2019	2008-2014	2014-2019		
	Per Cent								
0-8 Years	-3.21	-3	-3.6	-3.9	-3.5	-4.8	-1.8		
Some Secondary									
Education	-2.95	-0.04	-1.8	-2.3	-1.5	-1.4	-1.6		
Graduated from									
High School	N/A	N/A	1.1	0.4	1.7	2.5	0.7		
Some Post-									
Secondary	0.04	1.19	-1.1	0.6	-2.3	-3.6	-0.8		
Post-Secondary									
Certificate/Diploma	4.12	7.01	1.3	1.9	0.9	1.3	0.4		
University Degree	3.32	3.31	3.3	3.8	3.0	2.4	3.6		
Human Capital									
(Total)	1.12	1.43	0.8	1.1	0.6	0.6	0.6		
		2012\$ per							
		Capita							
Human Capital									
(Total)	1.12	1.43	0.8	1.1	0.6	0.6	0.6		

**Panel B: Compound Annual Growth Rates** 

Source: IEWB Database 2019, Appendix Table 15

## F. Social Cost of Environmental Degradation

Environmental degradation negatively affects the sustainability of stocks of wealth. Although placing a value on environment is controversial,<sup>16</sup> the Index of Economic Well-being includes estimates of the social costs of greenhouse gases (GHG) to highlight the importance of the environment to economic well-being. To adjust for environmental degradation, we subtract the estimated social costs of GHG emissions from total wealth. The social cost of emissions in each year is derived by multiplying the amount of greenhouse gas emissions by their social cost.<sup>17</sup> As we assume that the costs of environmental degradation are not dissipated each year, we sum the social costs of the previous years to estimate the total accumulated social costs of a given year.

In 2019, the total cumulative social cost of GHG emissions since 1981 was \$107546 per capita in New Brunswick (Chart 31), which represented 123.8 percent of Canada's total cumulative social cost of GHG emissions (Table 7, Panel B). Among the provinces, New Brunswick ranking third, exceeding the national level. In the Atlantic region, Newfoundland and Labrador had the lowest total social cost of greenhouse gases, but every Atlantic province had higher social costs than the Canadian average.

<sup>&</sup>lt;sup>16</sup> See Sharpe et al. (2008) for a brief discussion of the methodological challenges on the estimation of marginal social costs of GHG emissions.

<sup>&</sup>lt;sup>17</sup> The social cost is assumed to be \$125 CAD per ton in 2012 dollars.



Chart 31: Total Social Cost of Greenhouse Gas Emissions per Capita by Province, 2019

Source: IEWB Database 2019, Table 2





Source: IEWB database 2019, Appendix Table 9 & Appendix Tables 5-1 to 5-1





Panel B: Emissions per Capita





Source: IEWB database 2019, Appendix Table 9 & Appendix Tables 5-1 to 5-11

Between 1981 and 2019, New Brunswick's accumulated social cost of GHG emissions increased 17.27 per cent annually (Chart 34 and Table 7, Panel C). New Brunswick exceeded Canada's per-capita accumulated social cost starting in 1989 and remained above until 2019. The province's marginal social cost per year between 1981-2019 had a negative growth of -2.05 per cent annually from \$2,691 per capita in 1981 to \$1193 per capita in 2019. The marginal social cost of GHG per year per capita in the province had a positive growth in the 1981-2000 sub-period at 1.6 per cent per year and a negative growth between 2000-2019 sub-period at -5.5 per cent per year. In particular, between 2008 and 2014, the annual marginal social cost of GHG per capita decreased at an annual rate of 4.1 per cent. (Table 7, Panel C).





**Panel A: Accumulated Social Cost** 





Source: IEWB Database 2019, Appendix Table 2 & 9

# **G. Total Wealth Stocks**

To estimate the total stock of wealth, we sum the five components and adjust for the social cost of greenhouse gases. Total wealth is then scaled to generate the index of the stock of wealth domain of the overall Index of Economic Well-being.

In 2019, New Brunswick totaled \$162,627 per capita in wealth stocks (Chart 35).



Chart 35: Total Wealth per Capita by Province, 2019 Panel A: Per Capita

Panel B: Scaled (Index of the Stock of Wealth Domain)



Source: IEWB Database 2019, Table 2

Total wealth stocks decreased by 0.11 per cent annually from its 1981 level of \$169,316 per capita. In comparison, Canada's total wealth grew 0.31 per cent per year between 1981-2019. Consequently, New Brunswick's per capita wealth was 85.1 percent of Canada's per capita wealth in 1981 compared to 72.9 percent in 2019 (Table 7, Panel B).



Chart 36: Total Wealth per Capita in New Brunswick and Canada, 1981-2019 Panel A: Absolute Values

Table 7 summarizes the findings for the components of the wealth domain in New Brunswick from 1981 to 2019. The negative amounts in the first table (panel A) contribute negatively to the stock of wealth. Therefore, if these amounts improve, they contribute positively to the wealth stock; if they deteriorate, they have a negative impact on the wealth stock.

Source: IEWB Database 2019, Table 2

Most of the components grew from 1981 to 2019, but there are others that slowed down. Among the components that contributed to the increased in the stock of wealth are net capital stock, net international investment position and human capital stock. Natural resources have decreased by a small amount, but the total social cost of greenhouse gas has enormously decreased; in 1981 it was negative \$2691 per capita and in 2019 it was negative \$107,546 per capita, which contributed to the total decrease in wealth.

Relative to Canada, components that had high percentages even managed to exceed the Canadian average at some points. In 2000 and 2008, the human capital stock and the greenhouse gas social cost were above the Canadian level. However, total wealth was lower at the end of the period than at the beginning (72.1 percent versus 85.1 percent) because the social cost of greenhouse gas rose too high between these years.

The highest annual growth between 1981-2019 was the social cost of greenhouse gas (10.19 percent per year), which negatively affects total wealth growth. On the other hand, the largest negative growth was the net international investment position (-0.87 percent per year), which contributes positively to total wealth.

Total wealth growth has been very low and has mainly experienced declines in absolute terms throughout the years. Wealth growth was positive in the 1981-2000 sub-period (0.51 percent) and negative in the 2000-2019 sub-period (-0.7 percent), mainly due to the negative growth in natural resources stock (-4.4 percent) and the relatively low growth rates of other variables. The period when total wealth grew after the 2000s it was during the 2014-2019 period (0.1 percent), as a result of the considerable improvement in the net international investment position (-19.3 percent).

	1981	2000	2008	2014	2019		
	2012\$ per Capita						
Net Capital Stock	48,764	61,779	77,979	84,329	85,366		
R&D Stock	624	757	1,035	958	946		
Natural Resources Stock	17,619	38,747	23,991	13,772	16,298		
Net International Investment Position	-8,807	-7,942	-2,691	-7,740	-6,308		
Human Capital Stock	113,806	149,175	162,628	167,768	173,871		
Greenhouse Gas Social Cost (Total)	-2,691	-55,517	-83,435	-98,836	-107,546		
Annual Social Cost (per millions of tonnes)	2691	3462	3131	2364	2434		
Total Wealth	169,316	186,999	179,507	160,251	162,627		

 Table 7: Summary of Stocks of Wealth Components per Capita in New Brunswick, 1981-2019

 Panel A: Absolute Values

	1981	2000	2008	2014	2019				
		Per Cent of Canada's							
Net Capital Stock	69.6	70.8	74.9	72.3	70.8				
R&D Stock	44.2	44.0	48.2	46.3	50.048				
Natural Resources	65.2		48.5						
Stock		111.5		48.1	90.287.9				
Net International	68.1		81.6						
<b>Investment Position</b>		76.7		77.0	77.577.3				
Human Capital	97.9		100.9						
Stock		101.2		98.8	98.3				
Greenhouse Gas	95.5		122.2						
Social Cost (Total)		110.7		125.2	123.9				
Annual									
Social Cost	95.5		115.0						
(per millions		116.2		93.6	102.4				
of tonnes)									
Total Wealth	85.1	88.8	73.2	70.2	72.9				

Panel B: Relative to Canada (based on amounts per Capita)

### Panel C: Compound Annual Growth Rates

	1981-2019	1981-2000	2000-2019	2000-2008	2008-2019	2008-2014	2014-2019
	Per Cent, per Capita						
Net Capital Stock	1.48	1.25	1.7	3	0.8	1.3	0.2
R&D Stock	1.10	102	1.2	4	-0.8	-1.3	0.2
Natural Resources Stock	-0.22	4.14	-4.4	-5.5	-3.6	-8.7	2.9
Net International Investment Position	-0.87	-0.54	-1.2	-12.7	8.1	19.3	-4
Human Capital Stock	1.12	1.43	0.8	1.1	0.6	0.60	0.6
Greenhouse Gas Social Cost (Total)	10.19	17.27	3.5	5.2	2.3	2.9	1.7
Annual Social Cost (per millions							
of tonnes)	-0.27	1.33	-1.94	-1.25	-2.49	-4.57	0.73
Total Wealth	-0.11	0.51	-0.7	-0.5	-0.9	-1.8	0.1

Source: IEWB Database 2019, Table 2

Note: For the compound annual growth rates of net international investment position, positive growth indicates increased indebtedness. Thus, negative growth indicates an improvement.

# V. Trends in the Economic Equality Domain

A fall in equality has a negative impact on economic well-being, and vice versa. This section examines the two components of economic equality: income inequality and poverty.

Chart 35 shows the components of the economic equality domain in New Brunswick between 1981 and 2019. We measure income inequality by using the absolute values of Gini coefficient<sup>18</sup>, constructed by Statistics Canada, and we measure poverty intensity by using the product of the poverty rate, poverty gap ratio and the constant of 1.89. The poverty rate is defined in relative terms, using Statistics Canada's Low Income Measure (LIM), as the share of Canadians who live below the poverty line (fifty per cent of median family income). The poverty gap is the average difference between the poverty line and incomes of those in poverty.



Chart 32: Scaled Components of the Economic Equality Domain in New Brunswick, 1981, 2000, 2008, 2014 and 2019

Source: IEWB Database 2019, Table 3

In terms of the absolute values of Gini coefficients and poverty intensity, it can be noted that between 1981-2019, New Brunswick had a stronger improvement in poverty intensity (2.3 points) than in Gini coefficients (0.75 points) (Chart 36).

<sup>&</sup>lt;sup>18</sup> The Gini coefficient for all families in Canada is based on after-tax income. While increases in most economic indicators signify an improvement, an increase in the Gini coefficient indicates a decrease in equality. As such, when scaling the Gini coefficient to generate the index of income equality, we transformed it such that a higher score indicates an increase in equality. Similarly, for the index of poverty, a higher score indicates an improvement in poverty intensity.



Chart 36: Absolute values for Gini Coefficients and Poverty intensity for New Brunswick in 1981, 2000, 2008, 2014, 2019

Source: IEWB database 2019, Appendix 17 & Appendix 18

The weighting of these two components is not equal. As we consider poverty to be more detrimental to well-being than income inequality, we assign poverty intensity a weight of three quarters and income a weight of one quarter to determine the overall Index of Economic Equality. Therefore, changes in poverty, as opposed to changes in the Gini coefficient, will more significantly drive the trends in economic equality.

# **A. Income Inequality**

In 2019, New Brunswick's absolute values of Gini coefficient was 0.274, ranking second among the provinces (Chart 37). The province also ranked second (a score of 0.658) for the index of income Inequality, which is the scaled Gini coefficient (Chart 38). One can note that the provinces have the same ranking for the absolute and for the scaled values of Gini coefficient. First place was held by another Atlantic province, Prince Edward Island, while the other provinces in the region were situated near the middle of the rankings.



### Chart 37: Absolute values of Gini Coefficient by Province, 2019

Source: IEWB Database 2019, Appendix 17





Source: IEWB Database 2019, Table 3

The Gini coefficient for New Brunswick decreased from 0.290 in 1981 to 0.274 in 2019 (Chart 37). Over the 1980s, the Gini coefficient improved the most, as in 1989 it was 0.265. However, according to the subperiods established for the analysis of this report the largest decrease was between 2000-2008 (from 0.291 to 0.279), which is equivalent to greater equality in household income.

Canada's Gini coefficient (Chart 37, Panel A), higher than New Brunswick's throughout almost the entire period except the beginning of it, deteriorated from 0.285 to 0.299 between 1981-2019, with the largest growth between 1981-2000 of 0.56 percent per year. After 2000, the Gini coefficient had relatively low rates of negative growth.

The scaled Gini coefficient (Chart 37, Panel B), which the higher its value, the higher the index of equality, improved for New Brunswick between 1981-2019 (from 0.496 to 0.658). Given that the Gini coefficient improved significantly between the 1980s, the result is that the income inequality index grew the most during this same period (0.496 in 1981 and 0.698 in 1989-the highest index in the period). Considering the report's sub-periods, between 2000-2008, the scaled Gini coefficient had the greatest acceleration of 2.29 percent per year.

On the other hand, Canada's scaled Gini coefficient deteriorated from 0.536 to 0.423 between 1981-2019. The period with the strongest negative growth was between 1981-2000 (-3.41 percent per year) and the strongest growth between 2014-2019 (5.4 percent per year).

Given that Canada's scaled Gini coefficient has deteriorated relative to New Brunswick's between 1981-2019, it results that New Brunswick's scaled Gini coefficient percentage relative to Canada's ended up exceeding the national average over the years. In 1981 it was 92.5 percent of Canada's index of income equality and in 2019 it was 155.5 percent. The highest was in 2008 (193.8 percent of Canada's index of income equality), as New Brunswick's scaled Gini coefficient had the highest growth between 2000-2008 (Table 8, Panel B and Panel C).

Chart 33: Index of Income Equality in New Brunswick and Canada, 1981-2019







Panel B: Index of Income Equality (Scaled Gini Coefficient)

Source: IEWB Database 2019, Appendix Table 17

### **B.** Poverty Intensity

In 2019, the absolute value of poverty intensity for New Brunswick was 0.070 (Chart 38). For both the absolute value and the index of poverty intensity, the province ranked fourth.

In 2019, New Brunswick's index of poverty, based on scaled estimates of poverty intensity, was 0.649(Chart 38). This progress can also be observed through comparison with Canada. In 1981, New Brunswick's index of poverty intensity was 42.0 percent of Canada's index of poverty, but by 2019 it was 101.4 percent (Table 8, Panel B).



Chart 38: Absolute values of Poverty Intensity by Province, 2019

Source: IEWB Database 2019, Table 3



Chart 39: Index of Poverty Intensity by Province, 2019

Improvements in New Brunswick's poverty rate and poverty gap fueled the overall improvement in the index of poverty intensity between 1981 and 2019 (Chart 40). The poverty rate decreased by 0.84 percent per year in 1981-2019, while the poverty gap also decreased by 0.49 percent per year between the same period. For the province, the poverty rate fell more in the first sub-period (-1.70 per cent per year) than in the second sub-period (0.01per cent per year). For the poverty gap, the opposite occurred, with a greater decline in the second period (-0.8 per cent per year) than in the first sub-period (-0.14 per cent per year). The largest decline in both the poverty rate and the poverty gap was between 2014-2019 (-1.3 percent per year and -2.3 percent per year, respectively). This decline was the largest among all periods, resulting in the largest decline in poverty intensity (-3.6 per cent per year). Although the poverty rate in the province remained higher than the national average by 2019, the two subcomponents of the index of poverty still improved the index of poverty intensity over the period.

The index of poverty intensity in New Brunswick has grown at an annual rate of 2.3 per cent, from its 1981 level of 0.273 to its 2019 level of 0.649 (Table 8, Panel C). The index grew more strongly pre-2000 (3.79 per cent per year) than post-2000 (0.83 per cent per year). However, the strongest growth after 2000 was between 2014-2019 (4 percent per year).

It is towards the end of the period that the poverty intensity index for this province was similar to the national average. The index of poverty intensity in Canada has slightly increased by 0.01 percent per year from its 1981 level of 0.650 to its 2019 level of 0.651. Between 1981-

Source: IEWB Database 2019, Appendix 18

2000 the index of poverty intensity had the strongest negative growth (-0.47 per cent per year), but from 2000-2019 the growth was 0.5 per cent per year.

Chart 40: Index of Poverty and its Subcomponents in New Brunswick and Canada, 1981-2019 Panel A: Poverty Rate









**Panel C: Index of Poverty intensity** 

Source: IEWB Database 2019, Appendix Table 18

# **C. Index of Economic Equality**

As discussed previously, the index of the economic equality domain is the weighted sum of the index of income inequality and the index of poverty intensity. The assigned weights are <sup>1</sup>/<sub>4</sub> at the index of income inequality and <sup>3</sup>/<sub>4</sub> at the index of poverty. In 2019, the index of economic equality in New Brunswick was 0.638, ranking second (Chart 40).





New Brunswick's score for the index of economic equality increased over the period (Chart 41). The province's score rose at an annual rate of 1.81 percent from its 1981 score of 0.329 (Table 8, Panel C). The index of economic equality for Canada fell by -0.12 percent per year from 1981-2019, but by 1996 the gap between the province's and Canada's index of economic equality was smaller than previously. In 1981, New Brunswick's index of economic equality was 52.9 percent of Canada's index of economic equality but in 2019 it was 109.5 percent (Table 8, Panel B).

Source: IEWB Database 2019, Table 3



Chart 35: Index of Economic Equality in New Brunswick and Canada, 1981-2019

Source: IEWB Database 2019, Table 3

Table 8 summarizes the findings for the components of the economic equality domain in New Brunswick from 1981 to 2019.

In summary, both the index of income inequality and the index of poverty improved over the period under study, contributing to the growth of the index of economic equality. The factor that contributed most to the growth of the index of economic equality in New Brunswick was that the index of poverty, which has a weight of three quarters in the calculation of the index of equality, generally had higher growth rates than the index of income inequality over the period. This led to a wider change of the index of poverty intensity between 1981-2019 (0.376 points), compared to the change of the index of income inequality (0.162 points).

Compared to Canada, all indices nearly exceeded the national average in 2019. Between 1981 and 2019, the gap in the index of income inequality increased by 63.0 percentage points. The most surprising percentage is in 2008 (193.8 percent of Canada's index of income inequality). This is partly because the growth rate of the province's index of income inequality between 2000-2008 was 2.29 percent per year, while for Canada the growth rate for the same index during the same period was 1.05 percent per year and partly because Canada between 1981-2000 had the largest fall of all periods in this index (-3.41 percent per year) and in the years following its index did not exceed that of the province.

#### Table 8: Summary of Components of the Economic Equality Domain in New Brunswick, 1981-2019

	1981	2000	2008	2014	2019		
	Index Level						
Index of Income							
Inequality	0.496	0.488	0.585	0.601	0.658		
Index of Poverty	0.273	0.554	0.520	0.534	0.649		
Index of Economic							
Equality	0.329	0.537	0.537	0.551	0.651		

#### **Panel A: Index Level**

#### Panel B: Relative to Canada

	1981	2000	2008	2014	2019		
	Per Cent						
Index of Income							
Inequality	92.5	175.8	193.8	184.4	155.4		
Index of Poverty	42.0	93.2	88.2	89.6	99.7		
Index of Economic							
Equality	52.9	104.4	103.6	104.2	109.6		

#### **Panel C: Compound Annual Growth Rates**

	1981-2019	1981-2000	2000-2019	2000-2008	2008-2019	2008-2014	2014-2019
	Per Cent						
Index of Income							
Inequality	0.75	-0.09	1.6	2.3	1.1	0.5	1.8
Index of Poverty	2.3	3.79	0.8	-0.8	2	0.4	4
Index of							
Economic							
Equality	1.81	2.62	1	0	1.8	0.4	3.4

Source: IEWB Database 2019, Table 3

# VI. Trends in Economic Security Domain

The economic security domain is the last and most complex domain of the Index of Economic Well-being.<sup>19</sup> Its methodology has evolved since the Index's introduction in 1998. The economic security domain has four components concerning the risks to economic well-being: risk imposed by unemployment, financial risk from illness, risk from single-parent poverty, and risk of poverty in old age. These components have a different weight from one variable to another and may have different values from one year to the next because the calculations are based on the percentage of the population in each category. The category that has the highest percentage is the risk of illness, because for each year a percentage of 100% is assigned. Therefore, in the calculation of the index of economic security it is the risk of illness that is weighted the most and has a greater impact on the index. The second highest percentage is the risk imposed by unemployment. Finally, the two other risks were given almost the same

<sup>&</sup>lt;sup>19</sup> See Heslop (2009) 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.

weight in the calculation in 2019 (0.13 for the risk from single-parent poverty and 0.14 for the risk from poverty in old age). Over the years, the weight of the risk from single-parent poverty has decreased by about half (0.24 in 1981, 0.13 in 2019), while the other has doubled (0.07 in 1981 and 0.13 in 2019).

Chart 42 compares the components of the economic security domain in New Brunswick between 1981 and 2019.<sup>20</sup>



Chart 36: Components of the Economic Security Domain in New Brunswick, 1981, 2000, 2008, 2014, 2019

## A. Risk from Unemployment

Three variables comprise the index of the risk imposed by unemployment: the unemployment rate, the proportion of the unemployed receiving EI benefits, and the proportion of earnings that are replaced by EI benefits. We multiply the proportion of the unemployed receiving benefits and the proportion of earnings to obtain an index for financial protection from unemployment. To generate the index of risk from unemployment, we sum the scaled unemployment rate, which is assigned a weight of four-fifths, and scaled financial protection for unemployment, which is assigned a weight of one-fifth.<sup>21</sup> As a result, the unemployment rate is the primary driver of changes in the index of risk from unemployment.

Source: IEWB Database 2019, Table 4, 5, 6, 7 & 8

<sup>&</sup>lt;sup>20</sup> As linear scaling procedures are applied to all sub-components, an increase in any of the indexes translates to less risk, an improved outcome.

<sup>&</sup>lt;sup>21</sup> The unemployment rate receives a heavier weight, as it signifies the relative ease of obtaining employment. Compared to financial protection from unemployment, the unemployment rate is considered a more important indicator of economic security for most of the working population.
In 2019, the index of security from the risk imposed by unemployment in New Brunswick scored 0.639, ranking ninth among the provinces (Chart 43). All other Atlantic provinces had a lower index than New Brunswick. Nova Scotia's index was the closest to that of New Brunswick.





Source: IEWB Database 2019, Table 4

The index of risk from unemployment in New Brunswick increased by 0.53 percent per year in 1981-2019. The index of risk from unemployment grew slightly more in 2000-2019 (0.6 percent per year) than in 1981-2000 (0.45 percent per year) (Table 9, Panel C).

Canada also had growth in its index of risk from unemployment, but to a lesser extent than New Brunswick (0.19 per cent per year). Canada's growth in this index was also stronger between 2000-2019 (0.3 per cent per year) than between 1981-2000 (0.09 per cent per year).

For New Brunswick, the growth in the index of risk from unemployment was due to two factors; the decline in the unemployment rate (from 11.60 percent in 1981 to 8.18 percent in 2019) and the decline in the scaled financial protection for unemployment (from 0.559 to 0.462 between 1981-2019). The financial protection for unemployment is the product of EI coverage rate and the earnings replacement rate. The EI coverage rate for the province had a fall of 0.79 percent per year between 1981-2019, but the earnings replacement rate has had a rather flat curve like Canada's and a growth of 0.34 percent per year over the period. The province's EI coverage rate declined sharply in the first half of the 1990s, after which time the curve stabilized.

In the case of Canada, between 1981-2019 the unemployment rate had a fall (from 7.6 percent in 1981 to 5.73 percent in 2019) and the scaled financial protection for unemployment had a fall (from 0.302 to 0.160 between 1981-2019).

Compared to Canada, the index of risk imposed by unemployment in New Brunswick was 82.8 percent of Canada's index of risk from unemployment in 1981 and by 2019 it had risen to 94.5 of the national average (Table 9, Panel B), consequently reflecting New Brunswick's faster growth.







Panel B: EI Coverage Rate



**Panel C: Earnings Replacement Rate** 







Panel E: Index of Risk from Unemployment

Source: IEWB Database 2019, Table 4

## Table 9: Summary of Components for the Risk Imposed by Unemployment for NewBrunswick, for 1981, 2000, 2008, 2014, 2019

	1981	2000	2008	2014	2019		
	Percent						
Unemployment rate	11.6	10.0	8.5	9.9	8.18		
EI Coverage Rate	124.2	95.8	94.7	80.8	91.92		
Earnings							
Replacement Rate	38.3	42.7	44.0	44.2	43.54		
			<b>Relative to</b>				
			Canada				
			(Percent)		-		
Unemployment rate							
	152.6	147.1	139.3	143.5	142.7		
EI Coverage Rate	174.4	201.4	206.1	210.2	235.1		
Earnings							
Replacement Rate	99.2	105.3	108.0	107.2	103.8		
			Index Level		-		
Scaled Financial							
Protection for	0.550	0.472	0.402	0.407	0.460		
Unemployment	0.559	0.473	0.483	0.407	0.462		
Overall Index of							
KISK IFOIII Unomploymont	0 522	0 569	0.630	0 559	0.639		
Chempioyment	0.322	0.507	Belative to	0.557	0.037		
	Cono do						
	Callaua (Percent)						
Scaled Financial			(recent)				
Protection for							
Unemployment	185.1	240.7	255.1	266.6	2891		
Overall Index of							
Risk from							
Unemployment	82.8	88.7	94.4	89.0	94.5		

Source: IEWB Database 2019, Table 4

### **B. Financial Risk from Illness**

Canadian citizens have access to universal health care, which provides medically necessary procedures free of charge. As a result, they face significantly less risk than citizens in countries without universal coverage, such as the United States. However, Canadians still face significant private expenditures on health care, as many services, such as dental care, pharmaceuticals, and medically unnecessary procedures, are not covered. These expenditures, which disproportionately affect low-income Canadians, are rapidly rising. We use scaled private medical expenditures as a proxy for the risk imposed by illness.<sup>22</sup>

<sup>&</sup>lt;sup>22</sup> Private expenditures include all out-of- pocket expenditures non-reimbursed, made by individuals for the following: health care goods and services; health insurance claims paid to individuals by commercial and not-for-profit insurance firms, as well as the costs of administering those claims; non-patient revenues received by health care institutions, such as donations and investment income; private spending on health- related capital construction and equipment; and health research funded by private sources.

In 2019, the index of security from the risk imposed by illness in New Brunswick was 0.213, the second lowest score in Canada (Chart 45). The other Atlantic provinces also received the lowest scores for risk from illness but with a relatively higher level of security from illness, Newfoundland and Labrador was the outlier in the Atlantic region.





New Brunswick's low score for risk from illness stemmed from increasing private medical expenditures between 1981 and 2019 (Chart 46). Over the period, the share of private medical expenditures increased from 2.26 percent in 1981 to 3.31 per cent of income in 2019, which corresponds to an annual growth of 1.03 percent per year. As a result, New Brunswick's index of risk from illness decreased by 2.77 percent per year from 1981-2019 (Table 9, Panel C).

Canada's private medical expenditures increased from 1.75 per cent in 1981 to 2.97 per cent of income in 2019, which is equivalent to a growth of 1.43 percent per year. Therefore, Canada's index of risk from illness decreased by 1.61 percent per year.

In terms of percentages, New Brunswick's index of risk from illness was 79.5 percent of Canada's index of risk from illness in 1981 and in 2019 it represented 50.6 percent of the national average (Table 9, Panel B).

While the index of risk from illness in New Brunswick decreased over the period, the negative growth was concentrated between 2000 and 2008. During this subperiod, the index declined by 5.54 per cent per year (Table 9, Panel C), due to the highest increase in the proportion of private expenditure on healthcare in personal disposable income (2.19 percent per year).

Source: IEWB Database 2019, Table 5

Chart 40: Risk from Illness in New Brunswick and Canada, 1981-2019

Panel A: Private Non-Reimbursed Medical Expenditures as a Proportion of Personal Disposable Income



Panel B: Index of Risk from Illness (Scaled Private Medical Expenditures)



Source: IEWB Database 2019, Table 5

	1981	2000	2008	2014	2019	
			Percent			
Private Non-reimbursed						
Medical Expenditures as						
a Proportion of Personal						
Disposable Income	2.3	2.8	3.3	3.3	3.55	
			<b>Relative to</b>			
			Canada			
			(Percent)			
Private Non-reimbursed						
Medical Expenditures as						
a Proportion of Personal						
Disposable Income	128.9	105.6	115.4	118.3	122.8	
			Index Level			
Index of Risk from Illness	0.620	0.446	0.283	0.297	0.213	
	Relative to					
	Canada					
	(Percent)					
Index of Risk from Illness	79.5	90.6	66.9	65.0	50.6	

Table 10: Summary of Components for the Index of Risk imposed from Illness, for New Brunswick, for 1981, 2000, 2008, 2014, 2019

Source: IEWB Database 2019, Table 5

### C. Risk from Single-Parent Poverty

The index of security from the risk imposed by single-parent poverty consists of three variables: the divorce rate, the poverty rate for lone parent families, and the poverty gap for these families.<sup>23</sup> 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. We multiply the three variables to generate the index of the risk from single-parent poverty.

In 2019, New Brunswick scored 0.765 for the index of risk from single-parent poverty (Chart 47). The province enjoyed the sixth highest level of security from single-parent poverty in Canada. This high score was explained by the province's relatively low divorce rate of 0.60 per cent (the third lowest in Canada) and poverty gap for persons living in female lone-parent families of 27.8 per cent (also the third lowest in Canada) in 2019.

<sup>&</sup>lt;sup>23</sup> The divorce rate is included as divorce pushes many people, especially women, into poverty.



Chart 41: Index of Security from the Risk Imposed by Single-Parent Poverty by Province, 2019

IEWB Database 2019, Table 6

All the subcomponents of the index of security from the risk imposed by single-parent poverty have declined for New Brunswick and for Canada over the period thereby increasing this index.

For instance, for New Brunswick the index increased by 1.97 percent per year from 1981-2019. The index had a stronger annual growth between 2000-2019 (2.1 percent per year) than between 1981-2000 (1.81 percent per year). The largest post-2000 growth was between 2014-2019 (2.2 percent per year). As for Canada, its index's growth rate between 1981-2019 was 1.28 per cent per year, lower than that of New Brunswick. Moreover, the opposite occurred in terms of growth between the two sub periods, as the strongest growth was between 1981-2000 (1.60 percent per year) compared to the 2000-2019 period (1 percent per year). However, it is during this second period that the index of security from the risk imposed by single parent poverty had the highest growth (3.50 percent per year between 2014-2019).

In percentage terms, as a result of the higher growth rate of the index of security from the risk caused by single-parent poverty in New Brunswick than in Canada, the index was 85.1 percent of Canada's same index in 1981 but it was 110.5 percent by 2019, exceeding the national average.

As stated above, the subcomponents of the risk from single-parent poverty declined over the period for both New Brunswick and Canada. One can note that the largest negative growth for both the province and the country was in 2014-2019. For New Brunswick, the fall of the divorce rate, the poverty rate and the poverty gap for persons in lone-parent families were -3.71 percent, -8.7 percent and -2.2 percent per year, respectively.















Panel D: Index of Risk from Single-Parent Poverty

Source: IEWB Database 2019, Table 6

# Table 11: Summary of Components of the Index of Risk from Single Parent Poverty for New Brunswick, for 1981, 2000, 2008, 2014, 2019

	1981	2000	2008	2014	2019		
	Percent						
Divorce Rate	0.8	1.1	0.9	0.7	0.6		
Poverty Rate for							
Persons in Lone-							
Parent Families	60.3	47.9	45.3	42.0	34.8		
Lone-Parent							
Families Average							
Poverty Gap							
Ratio	40.1	27.9	27.2	28.8	27.8		
			Relative to				
			Canada				
			(Percent)				
Divorce Rate	71.8	94.1	76.8	65.2	56.9		
Poverty Rate for							
Persons in Lone-							
Parent Families	148.9	132.0	134.4	111.1	119.6		
Lone-Parent							
Families Average							
Poverty Gap							
Ratio	105.8	96.2	90.1	95.7	99.6		
			Index Level				
Index of Risk							
from Single-							
Parent Poverty	0.364	0.512	0.627	0.686	0.765		
	Relative to						
	Canada						
	(Percent)						
Index of Risk							
from Single-							
Parent Poverty	85.1	88.6	103.6	117.5	110.4		

Source: IEWB Database 2019, Table 6

### **D. Risk from Poverty in Old Age**

This final component of the economic security domain is the risk of poverty in old age. This component uses the poverty rate and poverty gap of persons 65 and over to calculate poverty intensity for the elderly<sup>24</sup>. We scale and multiply these variables by a constant of 1.89 to obtain the index of security from risk imposed by poverty in old age.

In 2019, New Brunswick's index of risk from poverty in old age scored 0.502, ranking seventh of the provinces (Chart 49). In the Atlantic region, the province ranked first and slightly exceeded Newfoundland and Labrador. Nova Scotia and Prince Edward Island, however, had the lowest levels of security from poverty in old age.



Chart 43: Index of Security from the Risk Imposed by Poverty in Old Age by Province, 2019

Although New Brunswick had an average ranking among the provinces, its curve in the index of risk from old-age poverty exceeded that of Canada's (Chart 50). From 1981 to 2019, the province's index improved by 3.24 per cent annually (Table 9, Panel C) from 0.150 in 1981 to 0.502 in 2019. At the national level, the index grew 1.39 per cent annually over the period.

In 1981, New Brunswick's risk from poverty in old age represented 43.6 percent of Canada's risk from poverty in old age and in 2019 it was 86.5 percent of the national level, a considerable improvement in percentage over the period (Table 9, Panel B).

The declines in the poverty rate and poverty gap among the elderly in New Brunswick fueled the improvement in the index. Between 1981 and 2019, the poverty rate for the elderly

Source: IEWB Database 2019, Table 7

<sup>&</sup>lt;sup>24</sup> This may include persons who are 65 in the household

declined 0.76 percent annually, though it remained above Canada's for the period.<sup>25</sup> The poverty gap declined 0.77 percent per year over the same period.

New Brunswick and Canada saw the fastest growth in the index of risk from poverty in old age between 1981 and 2000 at a rate of 8.76 percent per year and 4.47 percent per year respectively. In contrast, growth between 2000 and 2019 was negative for both the province and the country (-2 percent per year for the province and -1.6 percent per year for the country). However, the largest negative growth for the index of security imposed by poverty in old age for both the province and the country was between 2000-2008 (-2.9 percent and -2.4 percent respectively), (Table 9, Panel C), when the poverty rate grew very sharply (5.3 percent per year for the province and 6.84 percent per year for the country).

### Chart 44: Risk from Poverty in Old Age and its Subcomponents in New Brunswick and Canada, 1981-2019



Panel A: Poverty Rate for the Elderly



Panel B: Poverty Gap among the Elderly

<sup>&</sup>lt;sup>25</sup> Within this period, growth in the poverty rate exhibited much variation. This volatility reflects how the poverty rate from LIM is a relative measure. After 1995, the poverty rate for the elderly increased, as the rising real income of the general population experienced faster growth than the income of the elderly, which follows the inflation rate. See Andrews (2015) for further discussion on the linkages between the IEWB and the use of absolute versus relative measures of poverty.



### Panel C: Index of Risk from Poverty in Old Age

Source: IEWB Database 2019, Table 7

Table 12: Summary of C	Components for the Risk from	Poverty in Old Ag	ge for New Brunswick, for
1981, 2000, 2008, 2014, 2	2019		

	1981	2000	2008	2014	2019		
	Percent						
Poverty Rate for							
Elderly	26.6	12.3	18.6	21.6	19.9		
Poverty Gap							
among the							
Elderly	19.1	11.5	12.8	11.8	14.5		
			<b>Relative to</b>				
			Canada				
			(Percent)				
Poverty Rate for							
Elderly	130.4	161.8	144.2	172.8	130.9		
Poverty Gap							
among the							
Elderly	100.5	78.8	84.2	76.1	91.8		
			Index Level				
Index of Risk							
from Poverty in							
Old Age	0.150	0.738	0.583	0.556	0.502		
			<b>Relative to</b>				
	Canada						
	(Percent)						
Index of Risk							
from Poverty in							
Old Age	43.6	93.8	89.6	85.0	86.6		

Source: IEWB Database 2019, Table 7

#### **E. Index of Economic Security**

We generate the scaled index for the domain of economic security by aggregating the scaled values of the four components. The contribution of each component is the product of its scaled value and weight. The weights used for this aggregation procedure are constructed from the relative sizes of the populations subject to each risk.

In the table#, it can be noted that the risk imposed by unemployment and the risk imposed by illness were almost the same at the beginning and at the end of the period for both the province and the country, and that the weight is similar between the province and the country. In contrast, the risk imposed by single-parent poverty decreased by about half, while the risk imposed by poverty in old age doubled for New Brunswick. Canada has also had this trend, but to a lesser extent.

Table 13: Weights associated to each risk of the Index of Economic Security for New Brunswick and Canada, for 1981 and 2019

	New Brunswick		Cana	nda
	1981	2019	1981	2019
Risk imposed by Unemployment	0.27	0.29	0.28	0.29
Risk imposed by Illness	0.42	0.44	0.42	0.44
Risk imposed by Single-Parent Poverty	0.24	0.14	0.22	0.15
Risk imposed by Poverty in Old Age	0.07	0.13	0.08	0.12

Source: IEWB Database 2019, Appendix 29

In 2019, the index of the economic security domain in New Brunswick was 0.449, ranking tenth in Canada (Chart 51). Within the Atlantic region, Newfoundland and Labrador had the highest level of economic security. The Atlantic provinces had the lowest scores in Canada for this index.





Source: IEWB Database 2019, Table 8

The index of economic security in New Brunswick was below Canada's index (Chart 52) and it fell by -0.27 percent per year between 1981 and 2019. However, given that Canada also experienced over the period a negative annual growth in its index of economic security and more pronounced than the province (-0.31 percent), it results that in 1981, New Brunswick's index of economic security represented 79.6 percent of the one of Canada and in 2019 it was 80.7 percent of Canada's index of economic security level (Table 9, Panel B).





Source: IEWB Database 2019, Table 8

Table 9 summarizes the findings for the components of the economic security domain in New Brunswick from 1981 to 2019.

In summary, all indices were higher in 2019 compared to 1981 except for the risk imposed by illness index.

Compared to Canada, only the risk imposed by single-parent poverty has managed to exceed the Canadian level reaching 110.4 percent in 2019. The highest percentage, according to the years chosen as references, was in 2014, 117.5 percent of Canada's index level.

In terms of growth rates, between 1981-2019, due to the negative growth of the risk imposed by illness (-2.77 percent) and which recall it is weighted the most among the variables of the index of economic security, caused a decrease of -0.01 percent of this index. Since the risk imposed by illness is weighted the most, it also has the greatest impact on the index of economic security. For example, between 1981-2000, the fall in the risk by illness was -1.71 percent per year, but the growth in the risk imposed by poverty in old age was 8.76 percent per year, yet the index of economic security had a growth of only 0.28 percent per year. This is due to the fact that the risk by poverty in old age had the lowest weight among all variables at that period. The growth rate's largest fell in absolute terms was between 2000-2008 (-1.21 percent), mainly due because of the fell in the index of risk imposed by illness (-5.54 percent) and the fell in the index of risk imposed by unemployment and the growth in the index of risk imposed by single-parent poverty was the largest, all subperiods combined (2.7 percent per year and 2.2 percent per year, respectively) which resulted in the index of economic security (-0.6 percent per year).

# Table 14: Summary of Components of the Economic Security Domain in New Brunswick, 1981-2019

#### Panel A: Index Level

	1981	2000	2008	2014	2019
			Index Level		
Risk Imposed by					
Unemployment	0.522	0.569	0.630	0.559	0.639
Risk Imposed by					
Illness	0.620	0.446	0.283	0.297	0.213
Risk Imposed by					
Single-Parent Poverty	0.364	0.512	0.627	0.686	0.765
Risk Imposed by					
Poverty in Old Age	0.150	0.738	0.583	0.556	0.502
Index of Economic					
Security (weighted)	0.497	0.524	0.476	0.462	0.449

#### Panel B: Relative to Canada

	1981	2000	2008	2014	2019
			Per Cent		
Risk Imposed by					
Unemployment	82.8	88.7	94.4	89.0	94.4
Risk Imposed by					
Illness	79.5	90.6	66.9	65.0	50.6
Risk Imposed by					
Single-Parent Poverty	85.1	88.6	103.6	117.5	110.4
Risk Imposed by					
Poverty in Old Age	43.6	93.8	89.6	85.0	86.6
Index of Economic					
Security (weighted)	79.6	90.2	86.3	83.9	80.7

### Panel C: Compound Annual Growth Rates

	1981-2019	1981-2000	2000-2019	2000-2008	2008-2019	2008-2014	2014-2019
				Per Cent			
Risk Imposed by							
Unemployment	0.53	0.45	0.6	1.3	0.1	-2	2.7
Risk Imposed by							
Illness	-2.77	-1.71	-3.8	-5.5	-2.5	0.8	-6.4
Risk Imposed by							
Single-Parent Poverty	1.97	1.81	2.1	2.6	1.8	1.5	2.2
Risk Imposed by							
Poverty in Old Age	3.24	8.76	-2	-2.9	-1.4	-0.8	-2
Index of Economic							
Security (weighted)	-0.27	0.28	-0.8	-1.2	-0.5	-0.5	-0.6

Source: IEWB Database 2019, Table 8

### **VII.** Conclusion

This report presents estimates of the Index of Economic Well-being for New Brunswick from 1981 to 2019.

Since 1981, the IEWB for New Brunswick has improved. The overall IEWB rose 0.189 points from 0.288 in 1981 to 0.477 in 2019 in New Brunswick. This improvement amounts to a growth rate of 134 percent per year.

However, on a less positive note, growth in the IEWB for New Brunswick was higher in the 1981-2000 sub-period than in the 2000-2019 sub-period. Annual growth in the first period was 2.25 percent per year, which was higher than the growth in the second sub-period, 0.4 percent per year. The only time when the growth rate for IEWB for this province fell in absolute terms was between 2008-2014 (-0.3 percent per year). After 2014, however, the growth rate improved to 1 percent per year, the second highest growth rate in the period.

The overall increase in economic well-being was driven by robust growth in consumption and a considerable growth in equality. The index of consumption increased 0.502 points or 4.31 percent per year from 0.127 points in 1981 to 0.629 in 2019. Significant increases in personal consumption per capita, government expenditures per capita and in unpaid work per capita mainly accounted for the growth in the consumption domain over the period. However, due to the fall in the growth rate of unpaid work per capita (-0.2 percent per year) between 2000-2019 compared to 3.09 percent per year for 1981-2000 and the increase in regrettable expenditures between the second sub-period, the consumption domain experienced slower growth in the 2000-2019 sub-period compared to the 1981-2000 sub-period 1.73 percent versus 6.96 percent).

The wealth domain in New Brunswick had a fall of -0.24 percent per year over the period. The index of wealth decreased 0.017 points from 0.198 points in 1981 to 0.181 points in 2019. After the 2000s, the province experienced only negative growth until 2014-2019 (0.3 percent per year). The worst negative growth was between 2008-2014, caused not only because the natural resources stock had a fall in their growth rate of 8.84 percent per year (the lowest rate among all periods), but also because the net international investment grew by 19.25 percent per year, never such a high rate has been recorded in any period. The growth between 2014-2019 has been possible through a return of positive growth in the natural resources stock (2.9 percent per year, the largest all periods combined) and an undeniable improvement in net international investment of -4 percent per year.

The domain of economic equality was the second fastest growing component of the IEWB for the overall period. Given the greater weight given to the index of poverty intensity and the fact that this index generally had higher growth rates than the index of income inequality, the result was an increase of 1.81 percent per year in the index of economic equality between 1981-

2019 from 0.329 points in 1981 to 0.651 points in 2019. The highest growth rate of the index of economic equality was at the end of the period, between 2014-2019, 3.4 percent per year. This is mainly due to the largest growth rate that the index of poverty intensity had during the period analyzed, 4 percent per year, as the index of income inequality had a growth in absolute terms of 1.8 per cent per year.

The index of economic security decreased 0.048 points or -0.27 per cent annually from 0.497 in 1981 to 0.449 in 2019, largely as a result from deterioration in the risk imposed by illness. The risk imposed by illness was the only one to have a lower value at the end of the period (0.213 points) than at the beginning (0.620 points). Its negative growth rate was -2.77 percent per year between 1981-2019. At the end of the period, as a result to a constant growth during the period, the index of risk imposed by single-parent poverty was the highest (0.765 points) compared to the other indices that compose the index of economic security. The index of risk imposed by unemployment had the lowest growth, -0.50 percent per year between 1981-2019. In contrast, the risk imposed by poverty in old age had the highest growth over the period, 3.24 percent per year and even a growth rate of 8.76 percent per year during the first sub-period. However, its associated weight was for a long time of the overall period the lowest, so its large growth rate had a small impact on the global growth of the index of economic security.

When comparing the levels in 2019 of the IEWB and its components across provinces (Exhibit 5), New Brunswick had relatively low rankings. For the IEWB level, the province ranked ninth among the other provinces. At the component level of the IEWB, the level of the provincial consumption index was in ninth place. While for the wealth index and the security index, the province ranked ninth and eighth, respectively. Nonetheless, the province stood out by taking second place in the equality index. In terms of growth rates between 1981-2019, the province stands out more. As a result of its growth rate for the IEWB, the province ranked third among the provinces. The lowest ranking was in the growth of the wealth index (eighth place), followed by fifth place in the growth rate of the index of security. The province held its best places in the growth rate of the consumption and equality indexes, third and second place, respectively.

These findings indicate that economic well-being in New Brunswick has achieved significant improvement since 1981.

### Exhibit 5: Ranking by Index of Economic Well-being and its Components, Canada and the Provinces Panel A: Levels

Levels in 2019								
Rank	Index of Economic Well-being	Index of Consumption	Index of Wealth	Index of Economic Equality	Index of Economic Security			
1	British Columbia	Alberta	Newfoundland and Labrador	Alberta	British Columbia			
2	Newfoundland	Ontario	British Columbia	New Brunswick	Alberta			
3	Alberta	British Columbia	Ontario	Prince Edward Island	Canada			
4	Ontario	Nova Scotia	Quebec	British Columbia	Quebec			
5	Canada	Canada	Manitoba	Quebec	Saskatchewan			
6	Quebec	Manitoba	Canada	Canada	Manitoba			
7	Manitoba	Newfoundland and Labrador	Saskatchewan	Newfoundland and Labrador	Ontario			
8	Prince Edward Island	Saskatchewan	Prince Edward Island	Ontario	Newfoundland and Labrador			
9	New Brunswick	New Brunswick	New Brunswick	Nova Scotia	Prince Edward Island			
10	Saskatchewan	Quebec	Alberta	Manitoba	New Brunswick			
11	Nova Scotia	Prince Edward Island	Nova Scotia	Saskatchewan	Nova Scotia			

#### **Panel B: Growth Rate**

Growth Rates, 1981-2019							
Rank	Index of Economic Well-being	Index of Consumption	Index of Wealth	Index of Economic Equality	Index of Economic Security		
1	Newfoundland and Labrador	Newfoundland and Labrador	Newfoundland and Labrador	New Brunswick	Newfoundland		
2	Prince Edward Island	New Brunswick	Prince Edward Island	Prince Edward Island	Prince Edward Island		
3	New Brunswick	Quebec	Quebec	Newfoundland and Labrador	British Columbia		
4	Quebec	Prince Edward Island	Ontario	Saskatchewan	Quebec		
5	British Columbia	Manitoba	British Columbia	Alberta	New Brunswick		
6	Manitoba	Ontario	Manitoba	Nova Scotia	Canada		
7	Canada	Canada	Canada	Quebec	Manitoba		
8	Nova Scotia	Nova Scotia	New Brunswick	Manitoba	Alberta		
9	Ontario	British Columbia	Nova Scotia	Canada	Saskatchewan		
10	Saskatchewan	Saskatchewan	Saskatchewan	British Columbia	Ontario		
11	Alberta	Alberta	Alberta	Ontario	Nova Scotia		

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