



Comprehensive Wealth

COMPREHENSIVE WEALTH IN CANADA - MEASURING WHAT MATTERS IN THE LONG RUN HIGHLIGHTS



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INTRODUCTION

Canadians are constantly bombarded with data, from apps measuring our footsteps to indicators of public health, nutrition, crime and sports stats. The challenge today is not a lack of data. It is whether we have the right kind of information to foster knowledge about our families, communities and nation.

Perhaps the most pervasive and influential measurement is gross domestic product, or GDP.

GDP, which measures national income, emerged from the need to better understand economic challenges following the Great Depression and to help track critical supply chains during the Second World War. Ever since, it has played a key role in tracking economic performance within and between countries.

Just as GDP evolved during a period of change when new measures were called for, there are calls today to complement GDP with other measures. The great challenges of today—from climate change to global trade tensions, income inequality and the remarkable growth of information technologies—are far removed from the concerns of GDP’s founding architects.

Accordingly, Canadians need new ways to measure how the nation is progressing. They need measures that focus not only on short-term income growth but also on longer-term development prospects. The chief economist of the World Economic Forum recently summed up the need well recently when she posed the question, “[Are we] living at the expense of tomorrow” by “building up debts that we will simply leave to future generations?” (Blanke, 2016).¹ The answers to such long-term questions lie not in measures of income but in measures of wealth—and, more particularly, comprehensive wealth.

To the extent wealth is measured—which is hardly at all in most countries—reporting focuses only on produced and financial capital. Comprehensive wealth goes well beyond this to include natural, human and social capital as well:

- natural capital is the nation’s land, water, forests, fauna, minerals and fossil fuels
- human capital is the skills and capabilities of the workforce
- social capital is the trust and cooperation among people that result from shared norms.

Though less well known than produced and financial capital, these other forms of capital are just as essential to the nation as machinery, buildings and bonds.

Tracking the value of the nation’s comprehensive wealth “portfolio” is important because of the link between wealth and long-term development prospects: that is, Canada’s capacity to create and sustain well-being for its citizens.

The assets that make up the comprehensive wealth portfolio are the basis for producing nearly all goods and services that people consume—obvious things like food, electricity and health care—but also clean air, healthy forests and safe communities. The consumption of these goods and services is a large part of what creates individual well-being. That is why comprehensive wealth is so important.

Development requires sustaining consumption opportunities over time. More consumption today at the expense of less consumption tomorrow is, as the quote above suggests, not development at all. Understanding whether the nation is truly developing, therefore, requires understanding how its comprehensive wealth is evolving and not just how quickly GDP is growing. Yet no country, including Canada, currently measures comprehensive wealth.

Several international bodies have called on countries to go beyond GDP and begin measuring comprehensive wealth to gain greater insight into development and its sustainability. After all, they point out, GDP was never intended as a measure of well-being. The United Nations (UNECE, 2009) and the Commission on the Measurement of Economic Performance and Social Progress chaired by Nobel Prize-winning economist

¹ See the main report for the list of works referenced in this study.

Joseph Stiglitz (Stiglitz et al., 2009), have both called for measures of comprehensive wealth. In a similar vein, the head of the International Monetary Fund remarked at the 2016 World Economic Forum that “there are lots of things that we don’t measure well. We have to [...] assess, and probably change, the way we look at the economy.”²

Though no national government does so, a number of organizations have started to estimate comprehensive wealth. The World Bank published its first figures in the 1990s (Hamilton & Clemens, 1999) and it recently added a related indicator to its global development indicators. The United Nations also works in the area, releasing comprehensive wealth reports with estimates for most countries in 2012 and 2014 (UNU-IHDP & UNEP, 2012, 2014). This study—one of the first to measure comprehensive wealth using detailed data for a single country³—builds upon this and other work.

Comprehensive wealth is suggested as a complement to GDP, not a replacement for it. Both are required to assess the nation’s development. But Canadians need to begin thinking more about the country’s long-term trajectory. GDP says plenty about income in the latest quarter but is silent on the prospects for it in the future. In contrast, comprehensive wealth focuses on the long term, answering essential questions about the sustainability of development and well-being. As the President of the C.D. Howe Institute remarked recently, “GDP is so twentieth century.” Measuring wealth, he went on, is “the Next Big Thing” (Robson, 2015).

Prime Minister Trudeau, for his part, has underpinned the need for a new, longer-term view by noting that Canada’s greatest asset is not its resources but its resourcefulness—that investing in education to help people learn, think and adapt is essential to improving their lives, and that confident countries invest in their future.⁴ He might well have added that confident countries measure whether their investments are actually increasing wealth.

Key Findings

This study (see [Text Box 1](#) for a brief overview) reviewed Canada’s comprehensive wealth performance over the 33-year period from 1980 to 2013. This timeframe extends well beyond business and political cycles, ensuring that the results reveal trends free from the ebb and flow of markets and policies. Here is what was found.

Text Box 1. Concepts, data and methods used in the study

Though still new to many people, the concept of comprehensive wealth dates back to the 1990s and thinking about the individual elements of it dates back much further than that. Thinking about wealth dates back most famously to Adam Smith and his 18th century work on the wealth of nations. More recently, the late Canadian economist Anthony Scott had already characterized the environment in natural capital terms by the 1950s. Work on measuring human capital began seriously in the 1960s. Social capital, though somewhat newer, has been an area of active research since at least the mid-1980s.

To measure comprehensive wealth for Canada, this study used the best data available from Statistics Canada and, in a few cases, other sources. Global Forest Watch Canada was the main source of data used to compile the ecosystem indicators. In addition, data from the OECD were used for several indicators of human and social capital.

The methods used in the study are well established and would be familiar to anyone accustomed to working with national economic, environmental or social statistics.

² See <https://www.weforum.org/agenda/2016/01/gdp>.

³ The first such study, which was also carried out for Canada, was conducted by the Ottawa-based Centre for the Study of Living Standards.

⁴ See <http://pm.gc.ca/eng/news/2016/01/20/canadian-opportunity-address-right-honourable-justin-trudeau-prime-minister-canada>.

Overall, **comprehensive wealth** in Canada grew in real terms by 7 per cent per person from 1980 to 2013 (Figure 1 and Table 1).⁵ In other words, the basis for Canada’s capacity to generate the goods and services needed to sustain consumption was only slightly larger on average in 2013 than in 1980. On an annualized basis, growth in Canada’s comprehensive wealth was a lacklustre 0.19 per cent per year. This finding is largely consistent with the handful of other analyses of comprehensive wealth for Canada.

Figure 1. Comprehensive wealth per person, Canada - 1980–2013

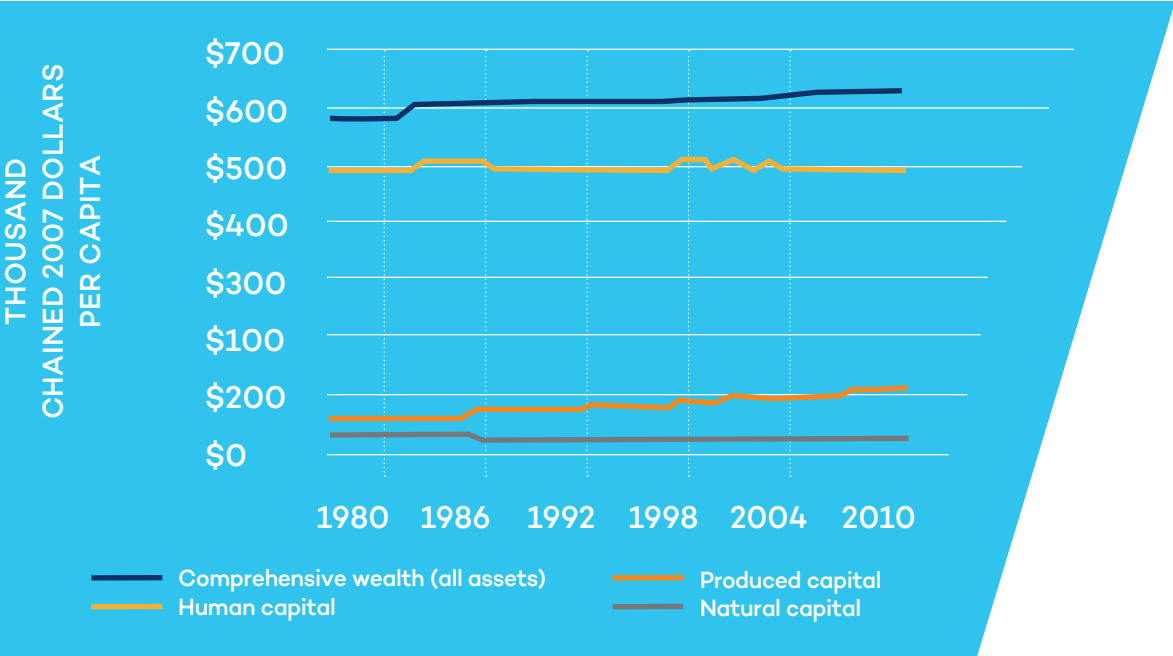


Table 1. Summary of findings

Indicator	Per capita level (chained 2007 dollars)		Growth (1980–2013)	
	1980	2013	Total	Annualized rate
Comprehensive Wealth Index	\$592,000	\$631,000	7%	0.19%
Produced Capital Index	\$58,100	\$100,700	73%	1.68%
Market Natural Capital Index	\$39,800	\$29,200	-25%	-0.93%
Non-Market Natural Capital Index			Unknown, but available non-monetary indicators suggest a decline	
Human Capital Index	\$500,000	\$500,000	0%	0%
Social Capital Index	n/a	n/a	Unknown, but available non-monetary indicators suggest stability	
Consumption*	\$24,300	\$37,500	54%	1.36%

*Consumption is shown for the sake of comparison only; it is not a component of comprehensive wealth

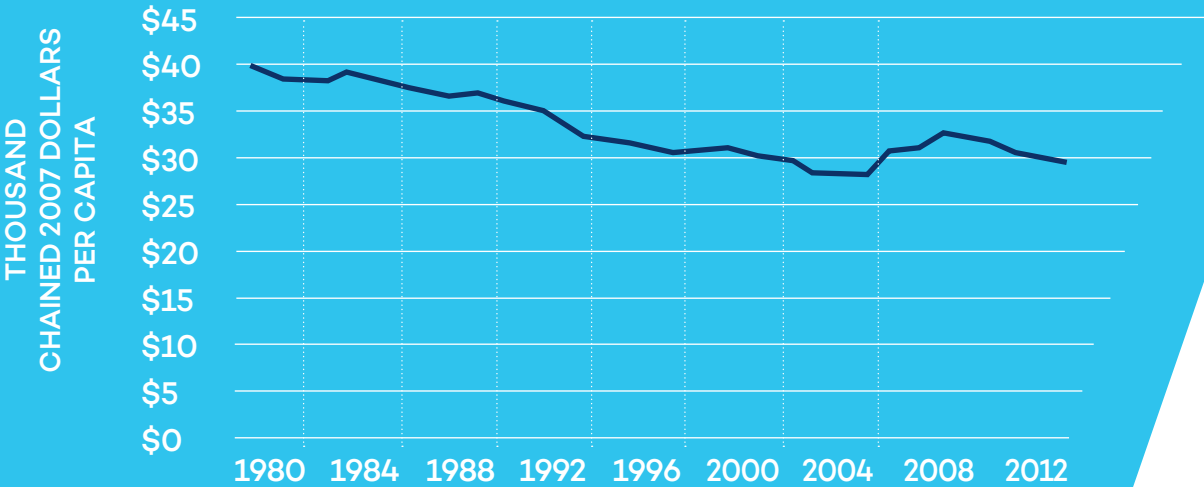
⁵ All values are expressed in real (chained 2007 dollar) terms per capita to account for the effects of growth in prices and population over time.

At the same time, Canadians consumed far more goods and services in 2013 than in 1980. Average individual consumption grew by 54 per cent over the period, or 1.36 per cent per year.

The gap between these two trends—relatively slow growth in comprehensive wealth and much faster growth in consumption—raises several concerns about long-term sustainability.

First, consumption growth was bolstered by the drawdown of **natural capital**. Due to a combination of physical depletion and changing market conditions, the value of Canada’s minerals, fossil fuels, timber and agricultural land per person declined by a startling 25 per cent between 1980 and 2013 (Figure 2). More recent data signal an even greater decline due to the steep drop in global oil prices. A series of climate and ecosystem indicators compiled for the study point to declines in other forms of natural capital (Text Box 2).

Figure 2. **Natural capital per person, Canada - 1980–2013**



Human capital—the largest component of comprehensive wealth (80 per cent)—did not grow at all between 1980 and 2013 even though more Canadians graduated with diplomas. This means that, even with improved credentials, the average Canadian worker had the same lifetime earning potential in 2013 as in 1980.

Produced capital was the bright spot in the comprehensive wealth portfolio, growing by 73 per cent per person over the period, or 1.68 per cent per year. A closer look, however, reveals that this growth was highly concentrated. Some 70 per cent of the growth in produced capital was due to expansion in just two areas: housing and the oil and gas extraction industry. This raises concerns about the concentration of the economy in areas known for volatility and that face uncertainty in today’s world, especially in the case of oil and gas extraction.

Social capital, which can only be measured in qualitative terms at the moment, showed signs of stability but not growth based on a series of non-monetary indicators compiled for the study (Text Box 3).

Taken as a whole, the trends above paint a worrisome picture. Though Canada’s development is not unsustainable—comprehensive wealth would have to be declining in real per capita terms for that to be the case—neither can it be said to rest on a really robust base. Growth in comprehensive wealth has been slow, especially in comparison to

growth in consumption, and its individual components show various signs of weakness. From the significant decline in natural capital to the flat trend in human capital, the highly concentrated growth in produced capital and the absence of evidence of growth in social capital, strength in Canada's comprehensive wealth portfolio is hard to find.⁶

Though Canada has not been managing its comprehensive wealth as well as it could, the country is fortunate to remain very wealthy. In fact, thanks largely to its vast reserves of natural capital, the United Nations' has ranked Canada first among G7 nations in terms of the level of comprehensive wealth per capita (UNU-IHDP & UNEP, 2014). This clearly puts the country in a position of strength vis à vis its peers. At the same time—and consistent with the findings of this study—the UN report ranked Canada last among G7 members in terms of growth in comprehensive wealth. Other countries, it would seem, are doing better than Canada at ensuring the growth of their comprehensive wealth portfolio. And they're catching up to Canada as a result. In 1990, the average per capita comprehensive wealth in other G7 countries was 72 per cent of Canada's; by 2010, this share had climbed to 83 per cent (Table 2).

Table 2. United Nations' estimates of comprehensive wealth for G7 countries

Country	Real comprehensive wealth <i>per capita</i> *			Annual growth (1990–2010)	
	1990	2010	Rank (2010)	Rate	Rank (2010)
Canada	475,846	502,972	1	0.28%	7
France	342,866	425,022	5	1.08%	2
Germany	325,513	435,655	3	1.47%	1
Italy	276,943	324,712	7	0.8%	5
Japan	361,234	432,236	4	0.9%	3
United Kingdom	345,487	409,074	6	0.85%	4
United States	411,673	463,375	2	0.59%	6

* All values expressed in thousand constant 2005 U.S. dollars.

Source: UNU-IHDP & UNEP, 2014.

⁶This is consistent with the recent conclusion of the federal government's Economic Advisory Council that per capita GDP growth could fall from its historic level of about 1.9 per cent annually to 0.8 per cent in the coming decades if policy changes to address the challenges associated with demographic shifts (such as aging of the workforce) are not implemented (Advisory Council on Economic Growth, 2016a).

What do the Findings Mean for Canada?

The need for Canada to measure and understand comprehensive wealth has never been greater. Its development model is based heavily on the exploitation of natural capital, and the country cannot sustain another 30 years of natural capital depletion. Short-term commodity price volatility and the longer-term global shift to a cleaner, knowledge-driven economy mean that future reliance on fossil fuels to underpin the country's growth is risky. The current debate about fossil fuel projects and pipelines needs, therefore, to include a vision of transformation toward a low-carbon economy. Given all this, it is surprising how little is understood of the role of natural capital within the overall economy. Comprehensive wealth measures promise to shed greater light on this role.

Inevitably, Canada will have to diversify its economy and focus on growing all components of the comprehensive wealth portfolio to ensure that its development remains sustainable. The range of possible actions to accomplish this is obviously broad and complex, touching upon aspects of tax, fiscal, industrial, trade, natural resource, climate, environmental, education and health policies to name but a few. Given this complexity, detailed policy recommendations are beyond the scope of this study. However, there are a few obvious areas in which actions will be necessary.

First, Canada must reverse the trend in its natural capital, both to ensure continued flows of resource commodities and to ensure the on-going provision of environmental benefits like clean air and water. Climate change represents a major threat to the latter and more research is needed to understand its potential impacts on Canadians and their well-being.

Second, Canada must grow its human capital. Better education and training are key here but so too are efforts to increase productivity. This is a particularly complex area and one where more data of the sort provided by comprehensive wealth would be very welcome.

Third, the country needs to diversify its produced capital so that housing and oil and gas infrastructure are less dominant in the overall mix. Investments in housing, while obviously important to well-being in many ways, can hamper it in the long term if they crowd out investments elsewhere in the economy or if housing values are diminished because of market corrections. The value of oil and gas extraction assets is tightly coupled with the value of Canada's fossil fuel assets, which have fallen rapidly in recent years and, as noted, face serious obstacles in the long term. Diversification of produced capital is needed to hedge against these risks. The recent recommendation from the federal government's Economic Advisory Council for significant and broad investment in the country's infrastructure is welcome in this regard: as the Council noted, "governments at all levels have not invested enough to support long-term economic growth" (Advisory Council on Economic Growth, 2016b, p. 4).

Finally, Canada needs to begin systematically measuring comprehensive wealth to track its success in making these and other changes necessary to ensure continued growth in the nation's wealth. As noted, Statistics Canada already keeps one of the most detailed sets of wealth figures in the world, so Canada is well placed to play a leadership role in this emerging area. To this end, the federal government should fund Statistics Canada to begin regular reporting of comprehensive wealth measures following the same cycle as GDP.

Simply publishing new measures of comprehensive wealth is not, of course, enough. Decision makers must at the same time increase their focus on comprehensive wealth, using the new measures both to guide and evaluate their efforts in ensuring its growth. Public and private efforts have long been focused on ensuring growth in GDP, and the country has enjoyed much success in this regard. The question of whether the comprehensive wealth portfolio—which is, after all, the basis for GDP—is sustainable has received less attention. The time has come to change that.

Text Box 2. Trends in ecosystem, climate and green growth indicators

In addition to the value of natural capital (Figure H1), a number of non-monetary indicators related to **ecosystems** and **climate** are included in this report to complete the portrait of natural capital. These are summarized in the table below.

The report also includes a **case study on green growth** using data compiled by the OECD.⁷ The case study provides some evidence that pressure on Canada's natural capital is being brought under control but also that more could be done. Indicators related to greenhouse gas productivity and water productivity have both improved in recent years, though the country ranked only 31st out of 34 OECD member states in terms of greenhouse gas productivity in 2013. Canada had figured among global leaders in the 1990s in terms of environmental innovation, though the country stood well below the OECD average in 2013. In terms of environmental taxes, Canada ranked second last among OECD member states in 2013, though its performance in this regard is likely to improve as more provinces move toward placing a price on carbon emissions.

Theme	Indicator	Trend	
Ecosystems	Forests	<ul style="list-style-type: none"> Slight decline in forest area between 2000 and 2011. About 40% of forests were considered “developed” in 2011.⁸ 	↓
	Wetlands	<ul style="list-style-type: none"> Wetland area declined in most parts of the country (other than the Maritimes and the North) between 2000 and 2011. With most of the country's remaining wetlands found in northern regions, only about one fifth were considered developed. 	↓
	Surface Water	<ul style="list-style-type: none"> No assessment of change over time possible. Nationally, 20% of surface water areas were considered developed, rising to 40% in NFLD, NB, NS, PEI, AB and BC. 	???
	Grasslands	<ul style="list-style-type: none"> Slight decline in grasslands from 2000 to 2011. Unlike wetlands, remaining grasslands are significantly developed (95%). 	↓
Climate	Precipitation	<ul style="list-style-type: none"> Precipitation generally increased in Canada between 1948 and 2014, consistent with climate change predictions. 	↓
	Temperature	<ul style="list-style-type: none"> Temperature showed a trend similar to that of precipitation, with an overall increase nationally from 1948–2014, consistent with climate change predictions. 	↓
	Snow Cover	<ul style="list-style-type: none"> In spite of increased precipitation, annual average snow cover declined across the country from 1972–2011, consistent with climate change predictions. 	↓
	Glacier Mass	<ul style="list-style-type: none"> The mass of selected glaciers in the Western Cordillera and High Arctic declined from 1960 to 2007, consistent with climate change predictions. 	↓
	Water Yield	<ul style="list-style-type: none"> The annual renewal of Canada's freshwater resources declined in the southern part of the country from 1971 to 2004, consistent with climate change predictions. 	↓
	Sea Ice Extent	<ul style="list-style-type: none"> The extent of sea ice declined from 1968 to 2010, consistent with climate change predictions. 	↓

⁷ OECD, *Green Growth indicators database*.

⁸ Ecosystems are considered “developed” if they are found within 1 kilometre of a development feature such as a road, pipeline or town.

Text Box 3. Trends in social capital indicators

Though no monetary assessment of social capital was possible for this study, a number of non-monetary indicators were available from Statistics Canada. They are divided into indicators of civic engagement and indicators of trust and cooperative norms. In general, they are available for much shorter time periods than the monetary estimates of produced, natural and human capital compiled for this study.

Overall, only one of the indicators of **civic engagement** (*Diversity in Social Networks*) showed a strong and consistent upward trend over the period considered. None of the indicators of trust and cooperative norms showed a consistent upward trend over the period, with considerable inconsistencies in results across time and regions. On the basis of these indicators, social capital would appear to be stable, but not growing, during the periods studied.

Theme	Indicator	Trend	
Civic Engagement	Participation in Group Activities	• Participation in group activities rose slightly from 2003 to 2008 but then remained steady until 2013.	↔
	Volunteering	• Volunteering rates rose slightly from 2004 to 2010 and then fell again in 2013.	↔
	Diversity in Social Networks	• The share of people having contact with friends from visibly different ethnic groups increased steadily between 2003 and 2013.	↑
	Control over public decisions	• The share of people feeling that they had some degree of control over public decisions increased substantially between 1993 and 2000 but then remained more or less stable until 2011.	↔
	Voter Turnout	• Voter turnout in federal elections trended generally downward from 1979 to 2007 but rose again in the last two federal elections though not to its 1979 level.	↔
Trust and Cooperative Norms	Generalized Trust	• Generalized trust showed essentially no change between 2003 and 2013.	↔
	Trust in Neighbours and Strangers	• Trust in neighbours was unchanged from 2003 to 2013, while trust in strangers increased slightly; both dipped significantly in 2008 before recovering again in 2013.	↔
	Trust that a Lost Wallet Will Be Returned	• Trust that a lost wallet will be returned was unchanged between 2003 and 2008.	↔
	Trust in Institutions	• Trust in institutions, measured as confidence in the federal government, varied considerably from 1993 to 2011, though there was a general trend toward greater confidence.	↔



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