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COVID series wrap-up, and measuring the “benefits” related to COVID “costs”: *The Value of a Statistical Life (VSL)* methodology (Part 5)

By Cara L. Brown, M.A.*

* Appreciation is extended to Ha Nguyen, M.A, for research assistance.

In Part 5 of this series, we juxtapose the numerous costs which have been incurred by Canada's federal government to combat COVID-19 with the benefits that have resulted from those costs. In undertaking this evaluation, we draw from the literature of economists who have attempted to “value life.” We also update Table 1 (confirmed COVID-19 cases and deaths across Canada) as of **May 27, 2021**,¹ and compare the numbers from the Jan. 12, 2021 data published in our January 2021 newsletter. Additional statistics are provided for Canada's COVID cases by age group, fatality rates from COVID in selected countries, and contrasting the COVID fatality rate vis-à-vis other lethal diseases.

COVID-related topics by Cara Brown

- ◆ **Brown's Economic Damages Newsletter**, Preliminary economic effects of COVID-19 in Canada, and implications for quantum experts (Part 1) – disseminated June 15, 2020
- ◆ **Brown's Economic Damages Newsletter**, Economic effect of COVID-19 in Canada: Disproportionate effects on industry sectors (Part 2) – distributed Aug. 4, 2020
- ◆ **Brown's Economic Damages Newsletter**, Shut-down of the Canadian economy: impact of COVID-19 on productivity (Part 3) – distributed Oct. 15, 2020
- ◆ **Brown's Economic Damages Newsletter**, Evaluating efficacy of government COVID-19 subsidies & programs (Part 4) – circulated Jan. 20, 2021
- ◆ Brown, C.L. (2021) “Cara Brown's Remarks on the Economic Impact of COVID-19 (to date)” *The Barrister*, Spring 2021, issue #129

¹ Previous issues of **Brown's Economic Damages Newsletter** supplied Table 1 statistics at June 30, 2020 (Part 1); July 30, 2020 (Part 2); Sept. 30, 2020 (Part 3); and Jan. 12, 2021 (Part 4).

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Confirmed cases & deaths from COVID-19 across Canada as of May 27, 2021

In Table 1 below, we update statistics on COVID-induced confirmed cases and deaths as of May 27, 2021. Interestingly, the “rate of death” from these confirmed cases began as follows: on June 11, 2020, the “rate of death” across Canada equaled 21 per 100,000 persons.² As of Sept. 30, 2020, this statistic equaled **25 per 100,000 persons**.³ The rate of death increased to **45 per 100,000 persons** at Jan. 12, 2021, reflecting the increase in confirmed cases and subsequently a higher per capita death rate. By May 27, 2021, Canada’s “rate of death” equaled **67 per 100,000 persons**. There are two other provinces whose “death rate” *exceeded* the national average: Manitoba (74 per 100,000) and Quebec (131 per 100,000).⁴ Table 1 below compares the confirmed case and death data between Jan. 12, 2021 and May 27, 2021.

Table 1: Compilation of COVID-19 Confirmed Cases & Deaths, by Province and Territory in Canada (May 27, 2021)

Canada/Province and Population	Confirmed cases		Deaths		Case rates (per 100,000)		Death rates (per 100,000)	
	Jan. 12, 2021	May 27, 2021	Jan. 12, 2021	May 27, 2021	Jan. 12, 2021	May 27, 2021	Jan. 12, 2021	May 27, 2021
Canada (38 million)	674,473	1,371,073	17,233	25,411	1,775	3,608	45	67
Alberta (4.4 million)	112,743	225,937	1,345	2,199	2,562	5,135	31	50
British Columbia (5.1 million)	58,553	143,264	1,019	1,690	1,148	2,809	20	33
Manitoba (1.4 million)	26,540	49,651	748	1,042	1,896	3,547	53	74
New Brunswick (0.8 million)	817	2,172	11	43	102	272	1	5
Newfoundland and Labrador (0.5 million)	393	1,279	4	6	79	256	1	1
Northwest Territories (0.04 million)	24	127	0	0	60	318	0	0
Nova Scotia (1.0 million)	1,534	5,457	65	79	153	546	7	8
Nunavut (0.04 million)	266	647	1	4	665	1,618	3	10
Ontario (14.7 million)	222,023	527,180	5,053	8,697	1,510	3,586	34	59
Prince Edward Island (0.1 million)	103	200	0	0	103	200	0	0
Quebec (8.5 million)	232,624	368,899	8,782	11,115	2,737	4,340	103	131
Saskatchewan (1.2 million)	18,770	46,163	204	534	1,564	3,847	17	45
Yukon (0.04 million)	70	84	1	2	175	210	3	5

Source: Government of Canada. *Coronavirus disease (COVID-19): Outbreak update*. Accessed at: <https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection.html> on May 27, 2021; and Statistics Canada. Table 17-10-0009-01 Population estimates, quarterly.

- Since Jan. 12, 2021, total cases across Canada doubled: from 674,473 to 1,371,073
- The total number of deaths arising from COVID across Canada increased by almost 50%, to 25,411
- The percentage increase in the number of deaths since Jan. 12, 2021 in Alberta, British Columbia and Ontario equaled 63%, 66% and 72%, respectively
- Interestingly, although these three provinces experienced a substantial increase in the number of confirmed cases and number of deaths, Quebec was able to *constrain* its increase in cases and accordingly had the smallest increase in number of deaths (26%) compared to the nation-wide average and all other provinces/territories⁵

² **Brown’s Economic Damages Newsletter** “Preliminary economic effects of COVID-19 in Canada, and implications for quantum experts (Part 1)”, June 2020, vol. 17, issue 3 (p. 9).

³ **Brown’s Economic Damages Newsletter** “Shut-down of the Canadian economy: impact of COVID-19 on productivity (Part 3)”, September 2020, vol. 17, issue 5 (p. 3).

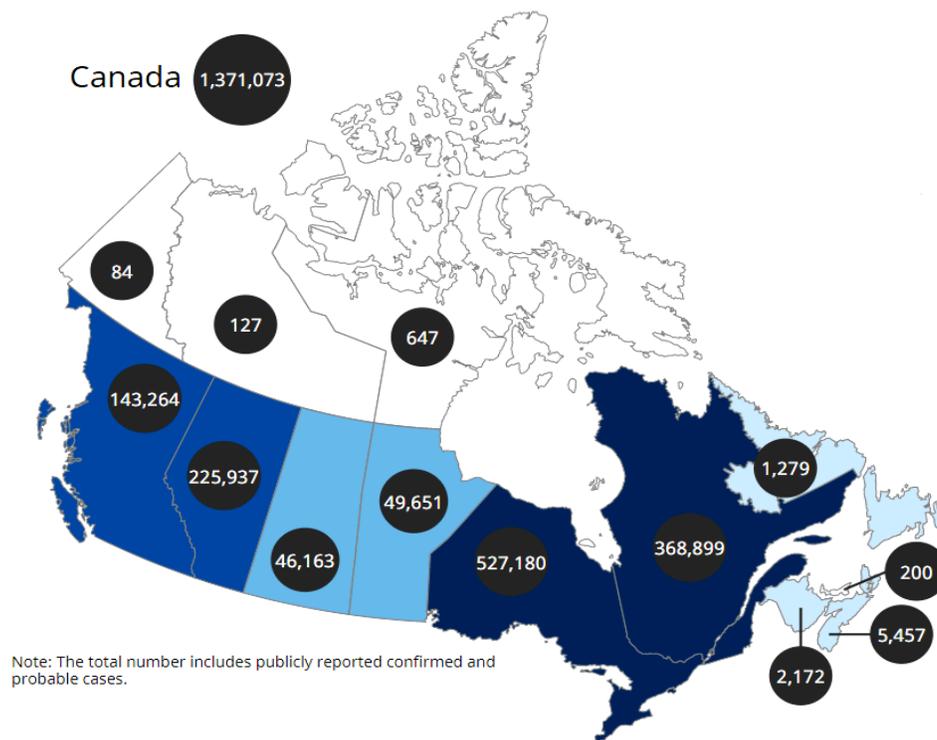
⁴ The results in Manitoba arose from its inability to keep COVID from its “most vulnerable residents”, it had lesser stringent public health restrictions, and testing and vaccination programs lagged the national average. Quebecers were more than three times more likely to die from COVID than the national average, and their long-term care (LTC) facilities were especially hard hit.

⁵ Except, of course, for regions with 0 deaths (NWT and PEI).

- Ontario⁶ and Quebec still account for most of the confirmed cases across Canada (65%) and account for an even larger share of total Canadian deaths (78%)
- Again, on a positive note, both NWT and PEI have averted any deaths arising from confirmed COVID cases. Indeed, the northern territories (NWT, Yukon, and Nunavut) and East coast provinces (Newfoundland, New Brunswick, Nova Scotia, and PEI)⁷ all have managed to keep the number of deaths from COVID under 10 or less

Figure 1 geographically displays the case counts from Table 1 above across all regions in Canada.

Figure 1: Cases by Region across Canada as of May 27, 2021⁸



We have added Table 2 in this issue which summarizes the distribution of confirmed cases and deaths in Canada, this time by age group rather than region (which is what Table 1 and Figure 1 reflect).

⁶ Ontario used the most stringent public health restrictions in Canada (indeed, Toronto has the dubious distinction of being the “most locked down city in North America”) but there was public confusion about what activities could be undertaken versus those that could. Ontario’s LTC facilities suffered a high incidence of cases and fatalities, exposing “structural inadequacies” that have led to a *Long-term Care COVID-19 Commission* report which confirmed these findings (source: Terence Corcoran: “Ontario’s LTC report exposes the real COVID story – systemic government failure,” *Financial Post Comment*, May 5, 2021).

⁷ The Macdonald-Laurier Institute’s *Provincial COVID Misery Index* (PCMI) is a tool designed to assess comprehensive provincial government performance through the COVID-19 pandemic. It uses 11 measures covering 3 broad categories: “Disease Misery” (cases, deaths and excess mortality); “Response Misery” (testing, vaccination, and restrictive public health measures); and “Economic Misery” (change in GDP in 2020/2021, change in unemployment 2020/2021, and increase in public debt as a proportion of GDP). PEI and Newfoundland, both island provinces, effectively closed their borders to restrict flows of people. Nova Scotia and New Brunswick managed their case counts using localized lockdowns, known as the “Atlantic bubble”.

⁸ Source: Government of Canada. Coronavirus disease (COVID-19): Outbreak update. Accessed at: health-infobase.canada.ca/covid-19/ on May 28, 2021.

Table 2: Compilation of COVID-19 Confirmed Cases & Deaths, by AGE GROUP, Canada (May 21, 2021)⁹

Age Group	Confirmed cases		Deaths		Case rates (per 100,000)	Death rates (per 100,000)
	Number	%	Number	%		
19 and under	252,734	18.8	11	0.0	3,105	0
20-29	255,173	19.0	54	0.2	4,976	1
30-39	219,394	16.3	117	0.5	4,145	2
40-49	197,606	14.7	264	1.1	4,071	5
50-59	176,734	13.2	823	3.3	3,402	16
60-69	109,164	8.1	2,207	8.8	2,309	47
70-79	57,766	4.3	4,984	19.9	1,922	166
80+	69,548	5.2	16,547	66.2	4,180	995
Total	1,338,119	100	25,007	100	3,521	66

Source: Government of Canada. *Coronavirus disease (COVID-19): Outbreak update*. Accessed at: https://health-infobase.canada.ca/covid-19/epidemiological-summary-covid-19-cases.html?stat=num&measure=total_last7&map=pt#a2 on May 28, 2021; and Statistics Canada. Table 17-10-0005-01 - *Population estimates on July 1st, by age and sex*.

Table 2 displays a vivid pattern: COVID case counts are extremely small until the age 50-59 age group. Before age 50, the *death rate* per 100,000 people is 5 or less. The actual number of deaths in the younger age groups (11 for those 19 years of age and younger, 54 deaths for the 20 to 29-year-olds, and 117 deaths for the 30 to 39-year-olds)¹⁰ are miniscule from a statistical viewpoint – although of course *any* number greater than 1 is a tragedy for all individuals.

And even though the overall number of deaths per 100,000 for Canada is 66/67, this statistic does not reach this metric until the 70-79 age group (166 per 100,000) and the 80+ age group (995 per 100,000).

COVID case counts around the world, and impact of pre-existing conditions on fatality rates

We have assembled information for various countries in terms of number of deaths, case fatality rate (“CFR”),¹¹ and deaths per 100,000 people. **The CFR is not the same as the expected probability of dying if one is infected with COVID-19**, mainly because there are not yet accurate statistics on the *total number of people* in the world who have contracted COVID (i.e., they have not been tested so not counted in the CFR). This implies that the CFR is likely an overestimate of the fatality rate from COVID. For example, Canada’s CFR in Table 4 is 1.8%. But the actual probability of dying (once infected) from COVID ranges from 0.3% to 1.0% in Canada.¹²

⁹ Latest data published by the Government of Canada at the writing of this report. The reader will see that in the “Total” column, the figures in Table 2 are slightly lower than the figures in Table 1 because the former were gathered as of May 21, 2021 whereas the latter were updated as of May 27, 2021. For instance, in Table 2 the death rate per 100,000 people is 66 for Canada, whereas in Table 1 it is 67 because of the date difference.

¹⁰ For instance, when we count the number of deaths from all causes in 2019 in Canada, the tallies are: 19 and younger, 2959 deaths; 20-29, 3021 deaths; and 30-39, 4465 deaths. (Source: Statistics Canada’s table 13-10-0709-01 (formerly CANSIM 102-0503).

¹¹ The case fatality rate (CFR) is derived as: [Number of confirmed deaths from disease / Number of confirmed cases of disease x 100] (source: As per information provided on Our World Data’s website (<https://ourworldindata.org/mortality-risk-covid>)).

¹² For instance, from Table 3 above we see that for the 80+-year-old age group, there have been 995 deaths out of 100,000 persons, suggesting a CFR of 1.0%. This rate declines as age declines.

Table 3: Estimated Case Fatality Rates for Selected Countries (May 27, 2021)

Country (Population)	Number of Deaths	Case-Fatality Rate [^]	Deaths per 100,000
Mexico (127 million)	222,232	9.2%	174
China (1.4 billion)	4,846	4.7%	< 1
Australia (25 million)	910	3.0%	4
United Kingdom (67 million)	128,010	2.9%	192
Germany (83 million)	88,000	2.4%	106
Russia (144 million)	117,595	2.4%	81
United States (328 million)	591,950	1.8%	180
Canada (38 million)	25,303	1.8%	67
New Zealand (5 million)	26	1.0%	1
Vietnam (96 million)	45	0.7%	< 1
Singapore (6 million)	32	0.1%	1

Source: As per information provided on Johns Hopkins Coronavirus Resource Center's website. Accessed at <https://coronavirus.jhu.edu/data/mortality> on May 27, 2021; and data released by the World Bank. Accessed at <https://data.worldbank.org/indicator/SP.POP.TOTL> on May 28, 2021.

[^]The case fatality rate is the number of confirmed deaths divided by the number of confirmed cases.

Table 3 shows other interesting results:

- ◆ Even though the US is not the most populous country in the world, it has reported the highest number of deaths from COVID out of all countries, and by a large margin compared to most other countries.¹³ And its deaths per 100,000 of 180 is similar to the UK's, at 192.
- ◆ China's result is perplexing, because despite being the origin of COVID, it has reported less than 5,000 deaths with a death per 100,000 persons being less than 1.0. These figures are inordinately small given China's current population of 1.4 billion people. They may not be reliable or up to date.
- ◆ New Zealand, Vietnam, and Singapore exhibit near-miraculous results, with the number of deaths being so few that their death per 100,000 persons is only 1.0 or less than 1.0. Compare this to Canada's death per 100,000 persons of 67.
- ◆ Mexico tops the list in Table 3 for the case-fatality rate (9.2%).¹⁴ This means that more people who contract COVID in Mexico die from it than in the other countries shown in Table 3. Countries with high CFRs like Mexico include Sudan (7.5%); Syria (7.2%); and Egypt (5.8%).

As the number of confirmed cases constantly changes, the CFR changes accordingly. The CFR was much higher in the earliest stages and declined in later stages. For example, the CFR for China was 17.3% as of February 20, 2020 compared to the current rate of 4.7%. The WHO says that that is because "the standard of care has evolved over the course of the outbreak".¹⁵ Our World in Data, one of the leading organizations publishing global data and research on the COVID-19 pandemic, indicates that the CFR increases with age – just like we show for Canada's population in

¹³ The countries closest to the US for number of deaths are India (315,235) and Brazil (454,429). Italy's count is at 125,622.

¹⁴ There is only one other country that published a CFR higher than Mexico, and that is Yemen (19.6%).

¹⁵ As per information provided on Our World in Data's website (<https://ourworldindata.org/mortality-risk-covid>) and Johns Hopkins Coronavirus Resource Center's website (<https://coronavirus.jhu.edu/data/mortality>).

Table 2 above. For instance, the CRFs for Chinese aged 20-29, 50-59 and 80 and over were 0.2%, 1.3% and 14.8%, respectively as of February 2020. This implies that elderly persons are at the greatest risk of dying if infected with COVID-19.¹⁶

Additionally, early data released by the Chinese Center for Disease Control and Prevention suggests COVID-19 infected persons with pre-existing health conditions are at a higher risk to die than those without underlying health conditions. For instance, approximately 10% of Chinese COVID-19 patients with cardiovascular diseases,¹⁷ 7% with diabetes, 6% with chronic respiratory diseases, hypertension or cancer died as of February 2020, whereas only 0.9% of the infected Chinese without any underlying health conditions died in the same period.¹⁸ A March 17, 2021 CDC weekly update reported that only 6% of Covid-19 deaths in the US were attributed to COVID alone.¹⁹

In Part 1 of this series, entitled “Preliminary economic effects of COVID-19 in Canada, and implications for quantum experts” (June 2020), I reported that the predicted mortality rate from COVID was anticipated to be approximately 1% (on average), but at that time prevailing percentages were 0.2% to 1.0% for Canada. We do know that deaths per 100,000 from COVID have decreased, reflected in the number of COVID-19 hospitalizations and deaths, particularly among the oldest Canadians, as vaccinations ramp up in Canada.²⁰ In fact, vaccinations have increased rapidly from only 2 million doses administered as of March 1, 2021 to more than 22 million doses administered by May 28, 2021.²¹

Two studies by Ioannidis have investigated infection fatality rates (more accurate than the CRF) in numerous locations around the world. From 61 studies and 51 locations, this author estimated the median infection fatality rate from COVID equaled 0.27%, but only 0.05% for people younger than 70 years old. Ioannidis concludes that “the inferred infection fatality rates tended to be much lower than estimates made earlier in the pandemic.”²²

Table 4 below shows that, except for the seasonal flu, the infection fatality rate of COVID-19 is lower in comparison to that of other virus outbreaks and diseases.

Table 4: Estimated Case Fatality Rates for Selected Diseases²³

Disease	Case Fatality Rates
SARS-CoV	10%
MERS-CoV ²⁴	34%
Seasonal flu (US)	0.1 to 0.2%
Ebola	40 to 50%
COVID-19	0.27% (Ioannidis, 2020)

¹⁶ As per information provided on Our World Data’s website (<https://ourworldindata.org/mortality-risk-covid>).

¹⁷ Cardiovascular disease (CVD) is a term used to refer to the range of diseases which affect the heart and blood vessels. These include hypertension (high blood pressure); coronary heart disease (heart attack); cerebrovascular disease (stroke); heart failure; and other heart diseases (source: H. Ritchie and M. Roser. *Causes of Death. Our World In Data*, December 2019).

¹⁸ As per information provided on Our World Data’s website (<https://ourworldindata.org/mortality-risk-covid>).

¹⁹ D. W. Allen. *Covid Lockdown Cost/Benefits: A Critical Assessment of Literature*. Simon Fraser University, April 2021.

²⁰ R. Rocha and L. Pelley. *Deaths, hospitalizations dropping among oldest Canadians as COVID-19 vaccinations ramp up*. *CBC News*, April 26, 2021.

²¹ As per data released by COVID19Tracker.ca Project as found at <https://covid19tracker.ca/about.html>.

²² John P.A. Ioannidis, *Infection fatality rate of COVID-19 inferred from seroprevalence data*, Bulletin of the World Health Organization, published online 14 October 2020.

²³ As per information provided on Our World Data’s website (<https://ourworldindata.org/mortality-risk-covid>).

²⁴ Middle East Respiratory Syndrome (MERS) is a viral respiratory illness that was first reported in Saudi Arabia in 2012 and has since spread to several other countries, including the United States (source: As per information provided on the Centers for Disease Control and Prevention’s website (www.cdc.gov/coronavirus/mers/)).

Canada government program costs in response to COVID-19 (as of April 2021)

In response to the COVID-19 economic shutdown, the Canadian government immediately put in place *Canada's COVID-19 Economic Response Plan* to provide economic aid to individuals and businesses affected by the COVID-19 lockdown.²⁵ The price tag associated with the federal government's "direct costs" (subsidies granted to persons and businesses) and liquidity support and capital relief totaled approximately \$1 trillion as of Aug. 6, 2020.²⁶ By the time the federal government budget was announced (April 2021), the total costs had increased to **\$1.235 trillion**.²⁷ Of this total, \$59 billion was devoted to "Protecting Health and Safety"; \$286 billion was spent on direct support measures (including the CERB and CEWS programs);²⁸ \$85 billion was earmarked as "Tax Liquidity Support"; \$82 billion was provided through the "Business Credit Availability Program (BCAP)"; \$422 billion constituted "Credit and liquidity support" through the Bank of Canada, CMHC and commercial lenders; and \$300 billion was spent on "Capital relief".

Of the \$286 billion total for direct support measures, the CERB benefit (to employees), which expired on Oct. 3, 2020, cost \$82 billion, but three additional programs that replaced the CERB added a further \$31 billion by April 2021.²⁹ The CEWS benefit (to employers) has cost a further \$111 billion (as of April 2021) and expires on June 5, 2021. This implies that the direct support payments made to employees and employers (\$224 billion)³⁰ comprised less than one-fifth (18%) of the \$1.235 trillion price tag.

It is worth mentioning that researchers who compare countries' public spending through the *Open Budget Survey* (OBS) find that Canada's tracking of expenditures is not transparent and inconsistent with most other governments.³¹ To the extent this is the case, then the tally of the government's "economic response plan" may not be complete – and it is likely to be understated, not overstated.

What is the impact on Canada's debt of all the COVID-related spending?

The government budget balance in any given year is calculated as the difference between a government's revenues (taxes and proceeds from asset sales) and its expenditures. It is often expressed as a ratio (%) of *Gross Domestic Product* (GDP). If the balance is positive, the government has a surplus (it spends less than it receives). **If the balance is negative, the government has a deficit** (it spends more than it receives).³² A country's national debt is the accumulation of all the annual deficits, plus the interest since Confederation.³³ The larger each annual deficit is, the more accumulated debt the government has. It helps to think of the "deficit" as the current-year balance and the "debt" as the ongoing tally of deficits for all years.

²⁵ As per information provided by the Government of Canada's website (<https://www.canada.ca/en/>).

²⁶ House of Commons of Canada, Department of Finance. *Canada's COVID-19 Emergency Response: Bi-Weekly Report on Parts 3, 8, and 18 of Bill C-13, Tenth Report*, August 6, 2020 (latest report prepared).

²⁷ Sources: Government of Canada's *Budget 2021: A Recovery Plan for Jobs, Growth, and Resilience* released April 22, 2021; Office of the Parliamentary Budget Officer's *Crown Corporation's COVID-19 Liquidity Support* released Oct. 2, 2020; and House of Commons Canada, Department of Finance. *Canada's COVID-19 Emergency Response: Bi-Weekly Report on Parts 3, 8, and 18 of Bill C-13, Tenth Report*, Aug. 6, 2020.

²⁸ All costs of these programs are published in the Table A1.15 of the *Budget 2021* released April 2021. It is worth noting that it is unclear whether the total cost for "Direct Support Measures" of \$286 billion includes the cost of the Canadian Emergency Response Benefit (CERB) program as this expenditure category was not included in Table A1.15. (The cost of CERB was clearly specified under the "Direct Support Measures" spending category published in the Department of Finance's *Canada's COVID-19 Emergency Response: Bi-Weekly Report* released Aug. 6, 2020). The CERB program expired on October 3, 2020, costing \$82 billion to this date. The figure of \$286 billion published in the *Budget 2021* is assumed to include the cost of CERB benefits.

²⁹ For individuals who are not eligible for EI benefits, the three additional programs included: (1) the *Canada Recovery Benefit* (CRB) of \$400 per week for up to 26 weeks; (2) the *Canada Recovery Sickness Benefit* (CRSB) of \$500 per week up to 2 weeks; and (3) the *Canada Recovery Caregiving Benefit* (CRCB) of \$500 per week per household for up to 26 weeks.

³⁰ This sum is comprised of \$82 billion for CERB + \$31 billion from programs that replaced CERB benefits + \$111 billion for CEWS.

³¹ Gaspard, H. "Not the most alluring of tasks: reforming Canada's fiscal practices, lessons from the Open Budget Survey (OBS) 2019" *Institute of Fiscal Studies and Democracy* (IFSD/IFPD), Apr. 29, 2020.

³² FocusEconomics. *Fiscal Balance (% of GDP)*. Available at: (<https://www.focus-economics.com/>)

³³ M. Gollom. *What voters need to know about deficits and the debt*. *CBC News*, October 3, 2019.

Canada's debt, following the massive COVID-19 expenditures, currently equals **\$1.2 trillion**. Experts predict that by 2025, the debt will be close to \$1.4 trillion.³⁴ And it is the government's spending on COVID benefits (and other programs) is what has put federal finances into the stratosphere. With the advent of the April 2021 budget, there is no end in sight to government spending. As Corcoran remarks:

Propelled by a powerful confluence of events, ideologies and economic theories – from COVID to climate to ultra-low interest rates – *Canada and the world have entered a new fiscal galaxy, one in which it seems that anything goes, where there are no real limits on what governments can do to boost jobs, growth and equity, and fund any green thing that comes into the minds of politicians and activists (emphasis added).*³⁵

The consequences of out-of-control government spending

In general, there are two primary sources of funding used by governments to cover their expenses: taxation and borrowing. When the revenue realized through taxation is not enough to fully fund a government's spending, they borrow money. Governments raise funds (*i.e.*, borrow money) from domestic and foreign financial institutions (banks, insurance companies, pension funds and other investment funds) and large corporations by selling securities, such as bonds, on the financial market.

The massive federal government economic response to COVID-19 is more expensive than the simple tally of program costs because the government has to borrow heavily to pay for the COVID-related support since we were already in a deficit position before March 2020.³⁶ Running a deficit means that our country is carrying a debt load which must be serviced by interest payments on a regular basis.³⁷ And although interest rates are at an all-time low (they were low in relative terms before COVID,³⁸ and then the central banks in Canada and the US slashed rates in March of 2020 in response to COVID), there are many who believe that the skyrocketing debt levels will place upward pressure on inflation, which in turn causes interest rates to rise. If that happens, *debt servicing becomes a lot more expensive*. The temptation at that stage to increase personal taxes, sales taxes, and corporate income taxes will likely be irresistible, especially when the federal government (and other think tanks) already believe that a wealth redistribution from 47 of Canada's richest billionaires should bail us out.³⁹ As Corcoran remarks, "the money to fund the debt will have to come from somewhere, and the only somewhere is the Canadian taxpayer."⁴⁰ As Jack Mintz comments:⁴¹

Ottawa believes only massive public spending and deficits can generate economic growth...The government doesn't understand or doesn't care that new taxes and regulations, not to mention wasteful subsidies, impede growth...Public spending is not a magic wand. It can even be a malevolent wand: *high deficits and looming tax hikes can rattle investor confidence, leading to capital flight.*

³⁴ T. Corcoran, "The end of fiscal probity" *National Post*, April 17, 2021.

³⁵ T. Corcoran, "The end of fiscal probity" *National Post*, April 17, 2021.

³⁶ The federal government posted a budgetary deficit of \$354.2 billion for the fiscal year ended March 31, 2021 accounting for the cost of COVID-19 Economic Response Plan of \$272 billion in fiscal year 2020-2021 (source: Department of Finance Canada. *Budget 2021 – A Recovery Plan for Jobs, Growth, and Resilience*, April 2021, Annex 1, pp. 355-356).

³⁷ Domestic and foreign financial institutions (banks, insurance companies, pension funds and other investment funds) and large corporations are the federal government's main lenders.

³⁸ For a discussion of the low-interest rate environment in the past 20 years and how in particular this affects interest/discount rates to use in civil litigation, see **Brown's Economic Damages Newsletter**, "Calculating Present Values in Civil Litigation: A Review of Past, Present & Future Interest Rates", January 2020, vol. 17, issue 1.

³⁹ T. Corcoran, "The end of fiscal probity" *National Post*, April 17, 2021.

⁴⁰ T. Corcoran, "Canada's cost of pandemonics tops \$1.5 trillion", *Financial Post Comment*, Dec. 1, 2020. One example of a "new" tax is the tax on cross-border digital products – to be paid by Canadian consumers.

⁴¹ Jack M. Mintz. *We'll pay for all these down payments*. *Financial Post*, December 3, 2020 and Department of Finance Canada: *Supporting Canadians and Fighting COVID-19: Fall Economic Statement 2020*, released Nov. 30, 2020.

Canadians might enjoy [the COVID benefits] now, but they won't like what comes next – the *higher taxes that the current lack of fiscal discipline makes inevitable* (emphasis added).

At the same time, the economic shutdowns induced by COVID have led to reduced levels of GDP. Mintz forecasts that “Canada’s lost output [GDP] from 2020 to 2025 will total \$730 billion.”⁴² In addition, the contraction in Canada’s economy in 2020 (measured by the decline in GDP—see Table 6) resulted in lower tax revenues for the government; and the monies spent to cover interest payments are diverted from government spending on health care and previously-committed priorities.

Justifying government spending: the “Magic Money Tree” (also known as MMT)⁴³

Governments are justifying the COVID-induced and COVID-related expenditures by promoting the idea that spending boosts growth in the economy, which raises GDP and personal income – but underpin this justification by the hope that interest rates will remain lower than the rate of growth.⁴⁴ To put it simply, the federal government and the central bank are “printing money” and hoping that the influx of government spending into the economy will boost growth; and impacts of burgeoning inflation on interest rates is thought to be constrained by monetary policy, of which part is the Bank of Canada’s official target for inflation (1 to 3% per year).

The problem with this theory, as Poloz (the former Governor of the Bank of Canada) says: “MMT is offering a free lunch, and most of us know there is no such thing.”⁴⁵ But Finance Minister Freeland believes there is a simple solution, which is taxing the rich: “It’s about us coming together and filling up the kitty”.⁴⁶ Corcoran cites American economist Ramey at the University of California, San Diego, who argues that government spending can boost growth, *but only if* there are no implementation delays and the “actual project adds genuine productive elements to the economy”. This is another way of saying that job creation must be organic (arise from economic demand) and self-sustaining. Spending government money on projects that do *not* add lasting value (such as a walking path coordinator who is paid more than \$100,000 per year but was never needed in the past⁴⁷) simply increases taxes for all workers.

Financing the pandemic, along with the additional spending included in the 2021 federal budget, was essentially an exercise in the redistribution of wealth. Canadians “borrowed” money from the federal government (in the form of benefits or relaxed liquidity and access to capital) that future Canadians will repay – unevenly. The extent of unevenness will depend on how future taxes increase or are levied: will it be through personal income tax, corporate tax, sales taxes, payroll taxes, property taxes,⁴⁸ or some type of “wealth” tax? Or, perhaps, a combination of all of these forms of tax? As Corcoran remarks: “The big risk in big spending and debt was highlighted in Canada last week in an alarming report from the Conference Board of Canada. It described how governments ‘spending like never before’ will produce ‘massive and permanent’ increases in debt levels”.⁴⁹

⁴² Jack M. Mintz. *We’ll pay for all these down payments*. [Financial Post](#), December 3, 2020.

⁴³ Originally an acronym for “Modern Monetary Theory”.

⁴⁴ Parliamentary Budget Office, *Fiscal Sustainability Report 2020: Update*, Nov. 6, 2020 (pp. 2, 13).

⁴⁵ T. Corcoran, “The end of fiscal probity” [National Post](#), April 17, 2021.

⁴⁶ T. Corcoran, “The end of fiscal probity” [National Post](#), April 17, 2021.

⁴⁷ As per a job ad published by the City of Calgary.

⁴⁸ British Columbia introduced the “Speculation and Vacancy Tax” in 2019 (Bill 45 was tabled and assented to in late 2018), which levies an additional property tax applied to the tax-assessed property value on homeowners in Kelowna/West Kelowna, Chilliwack, Vancouver, Mission, Abbotsford, Nanaimo (and Lantzville), and locales on southern Vancouver Island and the Gulf Islands, if they do not inhabit their homes 6 or more continuous months per year. The speculation and vacancy tax essentially doubles the amount of property taxes paid by homeowners. All other locations in BC are exempt from this additional property tax.

⁴⁹ T. Corcoran, “The fiscal monetary dragons” [Financial Post](#), Feb. 26, 2021.

Even if you believe that the immediate CERB/CEWS payments helped ease the pain of the COVID-induced shutdowns, the government's implementation of the COVID monetary assistance meant that it was not targeted, so some organizations and individuals received COVID monies who did not need them; while personal service industries relying on person-to-person contact suffered, disproportionately, the economic impact of COVID-induced shutdowns.⁵⁰ The question now is what benefits have or will accrue from the Canadian government's **\$1.235 trillion** pandemic price tag.

Benefit-Cost Analysis in Canada relating to the COVID pandemic

Corcoran identified early on that evaluating the Canadian government's expenditures to combat COVID should be done in light of the monetary benefits these expenditures are likely to achieve in his *Financial Post* article "The price of life: Lockdown costs are real. But are the benefits?", published on May 15, 2020. In the June 2020 issue of **Brown's Economic Damages Newsletter**, I stated that "The cost-benefit analysis depends directly on the predicted mortality rates from COVID-19" (p. 6). One year later, we have better statistics on the prevalence of contracting COVID, its lethality, and the amount of money spent by the Canadian government to combat it (all discussed above). What is needed now is to estimate the benefits from these expenditures to see if there is (any) concordance. First, however, we briefly discuss the "value of statistical life" (VSL) approach which is widely used by economists to value (statistical) life, and recognized problems with it.

Value of a Statistical Life (VSL) Methodology

Economists have long proposed a way of measuring human life, primarily for regulatory policy and global health policy. A concept called the "value of a statistical life" has been used most frequently. This is described as:

When economists perform a cost-benefit analysis (CBA) for regulations aimed at addressing life-threatening risks, they will often assign a dollar value of each life they expect to save. This allows them to compare the benefits of risk reduction to the monetary costs associated with complying with regulations, in order to assess whether on balance regulations should proceed. *The most common way to assign a dollar value to a life in CBA is by looking at what currently living individuals are willing to accept in terms of monetary payment for accepting increases in mortality risk* (emphasis added).⁵¹

A more succinct way of describing the VSL methodology is from Cutler: "measuring how much it is worth to people to reduce their risk of mortality or morbidity."⁵² Economists typically estimate VSL using data on the salary premiums commanded for a given increase in the level of job risk, although surveys are sometimes used. These data are available from labor markets, where individuals who work in risky professions are paid excess wages for taking on higher levels of job risk relative to safer options.⁵³ One of the difficulties with the VSL concept, however, is that individuals who *have* more money (whether earned or inherited) are willing to pay more to reduce health and death risks than those with a lower earning capacity. This very obviously does not translate into an interpretation that those with more money value

⁵⁰ For detail on the disproportionate impact, see **Brown's Economic Damages Newsletter**, "Economic effects of COVID-19 in Canada: Disproportionate effects on industry sectors" (Part 2), July 2020, vol. 17, issue #4.

⁵¹ J. Broughel, *Rethinking the Value of Life: A Critical Appraisal of the Value of a Statistical Life*, The Center for Growth and Opportunity at Utah State University, January 2020 Policy Paper 2020.002, p. 1.

⁵² D.M. Cutler, "The COVID-19 Pandemic and the \$16 Trillion Virus" **JAMA** Oct. 20, 2020 vol. 324, no. 15.

⁵³ J. Broughel, *Rethinking the Value of Life: A Critical Appraisal of the Value of a Statistical Life*, The Center for Growth and Opportunity at Utah State University, January 2020 Policy Paper 2020.002, p. 2. This concept is similar to the "pricing" that Workers' Compensation Boards across Canada do to determine the cost of employer-paid premiums arising from the projected risk of injury or fatality from a job. The premiums fund a pension for the injured worker or the surviving family.

life more than those with less money. What it does translate to is a limitation of the VSL methodology. The ability to pay to offset risks constrains the equation, so leads to a poor proxy of the value of risk to health and death.

One of the most established authors of the VSL methodology distinguishes the VSL methodology *from the value of life*: “The pertinent valuation concept is the value of small changes in risk, not the value attached to identified lives. Conflating these concepts is common.” Viscusi clarifies the VSL approach: “...[it] does not value identified lives [but] it is feasible to value risks to life consistent with decisions made with respect to other risk-related matters.”⁵⁴ Yet the VSL methodology has consistently been used by US regulatory bodies to measure the gains in years of life or whole lives when promoting policy. Other writers have commented that there is an inherent motive underlying use of the VSL methodology, because the greater the estimate of “benefits” from the policy, the more likely the policy will be implemented.⁵⁵

Viscusi remarks that there have been over 1000 published labor market estimates using the VSL methodology, which are obtained by analyzing the wage premiums that workers receive for occupational fatality risks. Using the American *Census of Fatal Occupational Injuries* (CFOI), Viscusi determined a **value per life** of \$10 million in 2015,⁵⁶ updated to \$11 million in 2019 dollars. This value is in the general range used by U.S. government agencies. The **value of one statistical life year (VSLY)** ranges from \$400,000 to \$500,000. Viscusi comments that this figure is similar to the figure for an expected life year used by the U.S. Department of Health and Human Services.⁵⁷ But the \$11 million per life price tag is not adjusted for earning capacity, years of life remaining (life expectancy), gender, race, or ethnicity. Attempts to adjust for these factors is typically met with resistance for equity reasons. Despite this reaction, virtually all scholars familiar with the VSL literature concur that the “value of life is not constant across age”.⁵⁸ What this means is that Viscusi’s \$11 million price tag cannot simply be multiplied by the number of lives saved, irrespective of age.

Cutler reiterates the \$11 million estimate from Viscusi (and many other studies) but includes additional costs in his estimate arising from the COVID virus. In addition to lost GDP (from lost earnings through job loss and lost revenue earned by businesses), Cutler places a value on three health impacts:⁵⁹

- i) Premature death;
- ii) Long-term health impairment following recovery from COVID;⁶⁰
- iii) Mental health impairment.⁶¹

The impact of COVID has been uneven: it varies by gender (men apparently suffer a greater risk than women),⁶² age (in Table 2 it shows that 66% of all deaths in Canada have occurred in the 80+-year age group), and race and ethnicity. The

⁵⁴ W. Kip Viscusi, “Pricing the global health risks of the COVID-19 pandemic” *Journal of Risk and Uncertainty* (2020) 61:101-128, p. 102.

⁵⁵ See, for instance, J. Broughel, *Rethinking the Value of Life: A Critical Appraisal of the Value of a Statistical Life*, The Center for Growth and Opportunity at Utah State University, January 2020 Policy Paper 2020.002, p. 10.

⁵⁶ This value is estimated by assuming that a typical individual is willing to pay \$1,000 to decrease the chance of dying in a given year by 1 in 10,000.

⁵⁷ W. Kip Viscusi, “Pricing the global health risks of the COVID-19 pandemic” *Journal of Risk and Uncertainty* (2020) 61:101-128.

⁵⁸ D. W. Allen. *Covid Lockdown Cost/Benefits: A Critical Assessment of Literature*. Simon Fraser University, April 2021. Allen quotes Hammit’s June 2020 article “Valuing Mortality Risk in the Time of COVID-19” wherein he surveyed the literature on VSL estimates and showed that all studies reject the idea that the VSL is constant over the life-cycle. As Allen comments, “to assume that the VSL is constant implies that individuals are indifferent between living one more day or eighty more years”.

⁵⁹ D.M. Cutler, “The COVID-19 Pandemic and the \$16 Trillion Virus” *JAMA* Oct. 20, 2020, vol. 324, no. 15.

⁶⁰ Cutler cites a study which has found that long-term impairment occurs for approximately one-third of COVID survivors with severe or critical disease. Other authors have commented on this aspect of COVID as it relates to the VSL methodology; see Lisa A. Robinson, “COVID-19 and Uncertainties in the Value per Statistical Life” *The Regulatory Review* Aug 5, 2020.

⁶¹ Cutler references impacts in this category such as loss of life among friends and family, fear of contracting the virus, concern about economic security, and effects of isolation and loneliness. This author cites a CDC “Household Pulse Survey” from September 2020 that indicated the proportion of US adults who reported symptoms of depression or anxiety averaged 40%, compared to the pre-COVID percentage in 2019 of 11%.

age factor comes into play again when assessing the number of years lost if COVID ends life prematurely. A 40-year-old Canadian has an average life expectancy of 42 years (men) or 45 years (women), compared to an 80-year-old Canadian with 9 to 11 remaining years to live (men or women, respectively).⁶³

Additional problems identified with the VSL methodology

One major difficulty with the VSL methodology is that it presumes that individuals' assessment of their risk from the offending event is accurate. Indeed, the VSL methodology is touted as being ideal *precisely because* it assumes that individuals know best how to assess their own risk⁶⁴ (like the universal economic assumption that individuals act to "maximize their utility"). But I see two problems with this key assumption:

- 1) Because of the nature of a virus transmission, we have only limited ways of minimizing exposure (wearing masks, sanitizing, employing social distancing, staying indoors, limiting contact). Also, at the outset of the pandemic, no statistics were available yet as to the probability of acquiring⁶⁵ the virus or its impact if acquired. Compounding this lack of information is the uncertainty as to what information reaches which individuals from the onslaught of media attention. Reporting that "confirmed cases are on the rise" is helpful, but ultimately yields very general information as to an individual's actual risk. Finally, we cannot discount the media's motives in reporting information. News has become entertainment, so its focus is on attracting attention – not necessarily about delivering accurate statistics.⁶⁶
- 2) Even if we *could* assume that individuals accurately assess their risk of contracting COVID and surviving, **individual actors have different risk preferences with respect to any perceived risk.**⁶⁷ This has become obvious with the COVID crisis and the regulations governments have attempted to enforce on the public, and the accompanying responses to these regulations (ranging from whole compliance to complete rebellion), which change over time in relation to the duration of the pandemic.

⁶² Although this has been reported to be true in the US, statistics for Canada indicate that of the 25,007 deaths as of May 21, 2021 (see Table 2 above), they are split almost exactly on a 50-50% basis between men and women. (Source: As per data published on the Government of Canada's website accessed at <https://health-infobase.canada.ca/covid-19/epidemiological-summary-covid-19-cases.html> on May 28, 2021). Recall that the figure of 25,007 in Table 2 conflicts slightly with the total number of deaths in Table 1 (25,411) because Table 1 is as of May 27, 2021 whereas Table 2 is as of May 21, 2021.

⁶³ Calculated at www.browneconomic.com > **Working Life/Life Expectancy Calculator.**

⁶⁴ As Robinson, Sullivan and Shogren remark: "Benefit-cost analysis is based on two fundamental normative elements from welfare economics. The first is that each individual is the best, or most legitimate, judge of his or her own welfare" (Lisa A. Robinson, Ryan Sullivan, and Jason F. Shogren, "Do the Benefits of COVID-19 Policies Exceed the Costs? Exploring Uncertainties in the Age-VSL Relationship" **Risk Analysis** July 16, 2020, p. 2).

⁶⁵ See, for instance, the discussion on mortality rates in **Brown's Economic Damages Newsletter**, "Preliminary economic effects of COVID-19 in Canada, and implications for quantum experts" (Part 1), June 2020, vol. 17, issue #3, pp. 6-10.

⁶⁶ As Allen states: "...the ubiquitous media, public health, and political response to the pandemic has been one-sided, incomplete, and almost unchanging over the past year. With respect to lockdown policies, many political jurisdictions have repeated the same spring 2020 programs in 2021, ignoring what has been learned in the meantime. Often public announcements were made that were inconsistent with basic Covid-19 facts that were easy to look up if you know where to look. Furthermore, when research results contrary to the official government response were shared on social media, they were often pulled from social media platforms. As a result, for average Canadians the public media and official public health news conferences have been the only source of Covid-19 information." (Source: D. W. Allen. *Covid Lockdown Cost/Benefits: A Critical Assessment of Literature*. Simon Fraser University, April 2021).

⁶⁷ This problem is identified in J. Colmer, "What is the meaning of (statistical) life? Benefit-cost analysis in the time of COVID-19" *Oxford Review of Economic Policy*, Aug. 29, 2020, p. 4. Some economists would argue that the individual differences in perceived risk is captured by the VSL formula by the amount of money an individual is willing to pay to reduce or eliminate such risk. But we have already noted the financial constraint associated with "willingness to pay". Colmer also argues that "an important consideration in the face of large changes in risk [from COVID] is the distinction between willingness to pay (WTP) for a reduction in risk and willingness to accept (WTA) compensation to forgo reductions in mortality risk" (p. 2).

As Colmer concludes:⁶⁸

When considering whether to save the life of a given individual, *society's choice cannot be based on the individual's willingness to pay. Their willingness to pay doesn't come into it.* The tools of constrained optimization that economists use, and that provide the foundations of benefit-cost analysis, are not appropriate in these circumstances because the identified individual is unable to make a trade-off. (emphasis added)

Another complication recognized with the VSL methodology pertains to the nature of the COVID pandemic, in that it does not involve small risks to health and mortality as it does in hazardous jobs, but much larger risks across the entire population.⁶⁹

One of the most recent and coherent assessments of the VSL methodology as applied to Canada is from Dr. Allen's report entitled "Covid Lockdown Cost/Benefits: A Critical Assessment of the Literature", April 2021, wherein this Simon Fraser University economics professor reviewed over 80 different academic studies and related Covid-19 data sites. In contrast, Allen observes that "...there has been no public evidence that either the federal or provincial governments of Canada have *considered both the benefit and cost sides of their actions*" (emphasis added). Allen is also quick to point out that while some object on a philosophical or moral basis to attempting to assign a "value" (in dollars terms) to life, a cost-benefit analysis cannot be undertaken without doing so.

Allen's article provides an excellent summary of the problems inherent in the VSL methodology as well as challenges to the economic benefits calculated (by others) from the massive lockdowns initiated since March of 2020. This author concludes his article with the following statement:

Over the course of the last year research has revealed that simple SIRS models fail to predict the progression of the virus, that individual reactions to the virus are important, and that the costs of blanket lockdowns are far reaching and large. *Lockdowns have some effect on cases, transmissions, and deaths, but these effects are marginal. As a result, lockdowns fail to pass a cost/benefit test* (emphasis added).⁷⁰

Perhaps even more importantly, Broughel believes that "...the problems with the VSL are not empirical, they are theoretical. It is not uncertainty with respect to how the VSL is measured...but rather whether the VSL itself is a theoretically sound way to value human lives...".⁷¹ Broughel instead recommends a "financial approach to valuing lives", which appears to be a combination of valuing the productive contribution of a society member (their earning capacity), valuing their replacement cost (if the society member is providing unpaid services), or using their annual consumption as a measure of the individual's "value."

Interestingly, Broughel recognizes the "human capital or earnings approach" in civil litigation cases (the most notable example being the September 11th victims compensation fund), but maintains that *his* idea of a financial approach involves an "assessment of how much money preventing a death saves" as opposed to forensic economic practice. Unfortunately, Broughel does not actually specify an empirical methodology to accomplish this task. This author's main

⁶⁸ J. Colmer, "What is the meaning of (statistical) life? Benefit-cost analysis in the time of COVID-19" *Oxford Review of Economic Policy*, Aug. 29, 2020, p. 6.

⁶⁹ As Colmer remarks: "*The type of risk presented by COVID-19 does not match the profile of risk used to support existing VSL estimates. COVID-19 presents unfamiliar and poorly understood risks that can involve weeks of severe illness, hospitalization, ventilators, and isolation from family and friends, before a lonely death among strangers*" (emphasis added).

⁷⁰ D. W. Allen. *Covid Lockdown Cost/Benefits: A Critical Assessment of Literature*. Simon Fraser University, April 2021.

⁷¹ J. Broughel, *Rethinking the Value of Life: A Critical Appraisal of the Value of a Statistical Life*, The Center for Growth and Opportunity at Utah State University, January 2020 Policy Paper 2020.002, p. 1.

conclusion about the VSL methodology, however, is that it is an “analytical contrivance.”⁷² I think this is a fancy way of saying that it makes little sense to non-economists when “valuing life” in the context of COVID.

How forensic economists can assist in “valuing productive life”

As most of our readers know, forensic economists place a value on an individual’s human capital when his/her career or earning capacity has been interrupted (say, in injury cases) or terminated (in wrongful death cases). This value includes an individual’s earnings at a job, or the cost of replacement labour if the individual provides unpaid services (parenting and household chores) – or both. Such assessments are routinely performed and have been accepted by Canadian courts since 1978. Rather than a value placed on “life”, these values quantify, as Broughel states, the “productive contribution of a society member”. From a tort law perspective of restitution, valuing a worker’s foregone earning capacity (and unpaid services to the household) is a tangible way to identify the cost of the interruption, the aim of which is to place the individual plaintiff in the position s/he would have been in had the interruption not occurred.

For this issue, we have performed research using Canadian data on income, consumption⁷³/expenditure,⁷⁴ and unpaid services to discover the annual “productive contribution of a [Canadian] society member”. To do so, we have made the following assumptions:

- i) We used a measure of household expenditure as a proxy for earning capacity, plus spending in excess of income (dissaving resulting in household debt). This includes taxes paid by workers, which is counted because the taxes have a value in terms of financing government expenditures that are not paid directly through user fees. We report two income estimates: those for the lowest 20% of households with income (“Lowest quintile”) and those for the top 20% of households with income (“Highest quintile”).
- ii) For unpaid services, we relied on time use data from Statistics Canada’s *General Social Survey* (GSS) from 2015 (the most recent available) to unearth how much time Canadians devote to household chores, childcare, and shopping or using services. We show the maximum amount of time spent by a Canadian household⁷⁵ at three different life stages: ages 25-44 with children under age 5; ages 45-64 with children over age 5; and Canadians in retired households (age 65+) with no children. To value the time, we employed the standard replacement cost approach adopted by Canadian courts to value unpaid services.⁷⁶

⁷² J. Broughel, *Rethinking the Value of Life: A Critical Appraisal of the Value of a Statistical Life*, The Center for Growth and Opportunity at Utah State University, January 2020 Policy Paper 2020.002.

⁷³ Statistics Canada’s *Survey of Household Spending* (SHS) tracks the annual expenditures and consumption of households in Canada. The SHS defines “consumption” as spending on food, shelter, household operations, household furnishings and equipment, clothing and accessories, transportation, health care, personal care, recreation, education, reading materials and other printed matter, tobacco products and alcoholic beverages (and cannabis), games of chance, and miscellaneous expenditures. It excludes personal income taxes, insurance payments, pension contributions, gifts of money, alimony, and contributions to charity. (Source: Statistics Canada’s *SHS Data Dictionary, 2017 Custom File (PUMF_SHS2017_Diary) Document*, 2019).

⁷⁴ The SHS defines expenditure as including consumption plus personal income taxes, insurance payments, pension contributions, gifts of money, alimony, and contributions to charity.

⁷⁵ We arrived at these estimates by adding together time spent by women “keeping house” plus men who are employed.

⁷⁶ In some instances, unpaid work is valued by occupational therapists using “agency” rates, obtained through telephone or internet research of a limited number of care agencies (usually 1 or 2). When explicitly valuing a plaintiff’s or decedent’s unpaid work, however, Canadian judges have preferred to use the hourly rate *earned by* “housekeepers” from statistical wage sources, *not rates charged by* agencies, because the latter rates include overhead expenses, profit, and taxes.

Table 5 summarizes this research.

Table 5: Value of Productive Contribution, Canadian Households (2019-2020 dollars)

<u>Value of Productive Contribution:</u>	<u>\$ Value</u> <u>(2019-2020 Dollars)</u>
Income/Expenditure:⁷⁷	
[1] Canadian households: Lowest quintile	\$37,500
[2] Canadian households: Highest quintile	\$185,500
Household and Parental Services (Unpaid Work):⁷⁸	
(a) Ages 25-44 (females keeping house, males employed, children under 5)	\$72,500
(b) Ages 45-64 (females keeping house, males employed, children over 5)	\$67,000
(c) Ages 65 and over (both partners retired, no children)	\$52,000
Number of Households in Canada⁷⁹	14 million

When we add household income to the value of household/parental services, we can see from Table 5 that annual values range from a low of \$89,500 (“Lowest quintile”, age 65 households with no children) to a high of \$258,000 (“Highest quintile”, 25 to 44-year-old households with young children). Immediately, we can see that Viscusi’s value of one year of life ranging from \$400,000 to \$500,000 is an overestimate compared to the metrics shown in Table 5.

Nevertheless, the values in Table 5 are of no help in valuing the lives of the elderly who are no longer working, providing unpaid services, or consuming goods and services in the marketplace (such as the elderly in long-term care homes). And we know in Canada that of the 25,411 approximate COVID deaths as of May 27, 2021, 66% of them occurred in the 80+-year-old age group (Table 2), few of whom were likely working at paid jobs.⁸⁰ And it does not help place a value on the “productive lives” of children, teenagers and young adults who have not yet entered the work force and do little to help around the house (a pro forma scenario).

The much larger problem with using the values in Table 5 in the context of COVID costs and benefits is that we have no direct link between the “productive value” of a Canadian household and the federal government’s spending to combat COVID. We do not even know how much, if anything, government spending helped avert months or years from an

⁷⁷ Source: Statistics Canada’s *User Guide for the Survey of Household Spending, 2019* Catalogue no. 62F0026M, January 22, 2021; and Statistics Canada’s Table 11-10-0223-01 - *Household spending by household income quintile, Canada, regions and provinces*. The lowest income quintile includes the bottom 20% of income-earning households whereas the highest income quintile includes the top 20% of income-earning households.

⁷⁸ The role group data from the 2015 GSS is from a special tabulation prepared for Brown Economic Consulting by Statistics Canada. This is the most recent data set available, which divides time use into specific role groups (e.g. gender, partner status, age, employment status, partner’s employment status, presence of children and age of children). The hourly replacement rate for unpaid services in Canada of \$20.80 (in 2020 dollars) is from Table 9-7 of Brown, C.L. **Damages: Estimating Pecuniary Loss** (Canada Law Book, a Thomson Reuters business), 28th edition, Dec. 2020, p. 9-42.7.

⁷⁹ As of 2016 (source: Statistics Canada’s *Census Profile, 2016 Census* as found at <https://www12.statcan.gc.ca/census-recensement/2016/>).

⁸⁰ Data from Statistics Canada’s table 14-10-0327-01 show that in 2019, only 8% of the Canadian population aged 70 and over “participated” (held jobs) in the labour market.

individual's life expectancy that would have been taken by acquiring COVID. A summary of costs and benefits related to COVID are shown in Table 6 below.

Table 6: Summary of Costs & Benefits Related to Government Spending Related to COVID

<u>COSTS</u>		<u>BENEFITS</u>	
(1) Protecting Health and Safety ⁸¹	= \$59 billion	(A) Number of lives saved	= ?
(2) Direct Support Measures ⁸²	= \$286 billion	(B) Value per life	= ?
(3) Provincial expenditures ⁸³	= \$78 billion		
(4) Lost GDP in 2020 (Canada) ⁸⁴	= \$103 billion		

The discussion above indicates how many problems have been identified with the VSL methodology, and Table 5 only assigns value to the “productive” element of life, so we do not have a reasonable figure for the “value per life” (B); in fact, it may not be amenable to quantification. The “number of lives saved” (A) is still an unknown, because while we may have more data on the case/infection fatality rate than we did one year ago (Table 2 suggests that the highest mortality rate in the past year in Canada was 0.1%⁸⁵ whereas Ioannidis pegs it at 0.27%), the majority of deaths arising from COVID occurred within patients who had, on average, 3 other co-morbidities (pre-existing conditions).

In Table 6, we have also summarized the “costs” incurred by federal and provincial governments to fight COVID, plus the foregone GDP from 2020. The reader will see from Table 6 that out of the \$1.235 trillion spent by the federal government, we have only counted the \$59 billion for “protecting health and safety” and \$286 billion in direct monetary support. For the purpose of Table 6, we omitted the remaining costs associated with increasing liquidity and access to capital as some economists have argued that these “costs” will in fact convert to “benefits” by stimulating growth in the economy. But if we total the **COSTS** in Table 6, we still arrive at a sum of \$526 billion, or more than ½ trillion dollars. To place this number in context, Canada's total GDP in 2019 (before COVID) was \$2.3 trillion dollars.⁸⁶ The expenditures from Table 6 mean that the government's response to COVID – *for one year* – constituted 23% of Canada's entire GDP (even though we omitted the spending on liquidity and capital relief).

⁸¹ Sources: House of Commons of Canada, Department of Finance. *Canada's COVID-19 Emergency Response: Bi-Weekly Report on Parts 3, 8, and 18 of Bill C-13*, Tenth Report, August 6, 2020; and the Government of Canada's *Budget 2021: A Recovery Plan for Jobs, Growth, and Resilience* released April 22, 2021.

⁸² Sources: House of Commons of Canada, Department of Finance. *Canada's COVID-19 Emergency Response: Bi-Weekly Report on Parts 3, 8, and 18 of Bill C-13*, Tenth Report, August 6, 2020; and the Government of Canada's *Budget 2021: A Recovery Plan for Jobs, Growth, and Resilience* released April 22, 2021.

⁸³ Including provincial spending on direct measures, liquidity and unallocated funds related to COVID-19. Unallocated funds are a type of contingency fund that may be used in the future for direct measures, but for which there are no committed plans, and the funds have not been transferred from the federal government to the provincial government. These funds impact government expenditures and government deficits (source: D. Macdonald. *Picking up the tab: A complete accounting of federal and provincial COVID-19 measures in 2020*. Canadian Centre for Policy Alternatives, January 2021).

⁸⁴ Statistics Canada. Table 36-10-0434-01 – *Gross domestic product (GDP) at basic prices, by industry, monthly (x 1,000,000)*; and International Monetary Fund. *Canada: 2021 Article IV Consultation-Press Release and Staff Report*, March 2021, Table 6, p. 46.

⁸⁵ Estimated from the 995 deaths in the 80+-year-old age group out of 100,000 persons (see Table 2).

⁸⁶ Statistics Canada. Table 36-10-0434-01 – *Gross domestic product (GDP) at basic prices, by industry, monthly (x 1,000,000)*; and International Monetary Fund. *Canada: 2021 Article IV Consultation-Press Release and Staff Report*, March 2021, Table 6, p. 46.

I would venture to say that without a clear link between the benefits of this level of expenditure, the costs outweigh the benefits. I believe this conclusion is even more compelling when we know that *none of the provincial or federal governments actually had the funds to spend*, plunging the Canadian economy into never-before-seen debt levels. This means that the “benefits” received by (some) Canadians will eventually be repaid by (other) Canadians. This brings us to the distribution question inherent in any cost-benefit analysis.

Who bears the costs and who receives the benefits?

There is one final issue to mention, and that is the costs summarized in Table 6 above were not spent uniformly on Canadian citizens. We have already discussed situations in previous COVID newsletters where almost 77,000 federal government workers were paid full salary but did not or could not work, and there was even a special code in the collective agreements that permitted them to do so (code 699).⁸⁷ Or there was the example of the Royal Ottawa golf club whose CEWS benefits allowed them to turn a profit of \$1 million (which would have been \$0 *without* the CEWS benefits).⁸⁸

We also have little to no data on exactly who has or who will enjoy the “benefits” of the government’s expenditures – neither the direct support measures, like the CERB and CEWS, or the liquidity/capital relief provided by the Bank of Canada, or the lower cost of borrowing due to lower interest rates.

Given these observations, it may be that the government’s COVID expenditures reflect a redistribution of wealth more than anything else.

⁸⁷ **Brown’s Economic Damages Newsletter**, “Shut-down of the Canadian economy: impact of COVID-19 on productivity (Part 3)” September 2020, Vol. 17, Issue 5, pp. 14-15.

⁸⁸ **Brown’s Economic Damages Newsletter**, “Evaluating Efficacy of Government COVID-19 Subsidies and Programs (Part 4)” January 2021, Vol. 18, Issue 1, p. 16 (part of “Unintended Consequences”).

Consumer Price Index



Unemployment Rate

From April 2020 to April 2021*		For the month of April 2021	
(rates of inflation)			
Canada**	3.4%	Canada:	8.1%
Vancouver:	2.8%	Vancouver:	7.4%
Toronto:	2.4%	Toronto:	9.5%
Ottawa:	4.1%	Ottawa:	6.7%
Montréal:	2.9%	Montréal:	7.7%
Edmonton:	3.0%	Edmonton:	10.5%
Calgary:	3.1%	Calgary:	9.3%
Halifax:	4.1%	Halifax:	8.1%
St. John's, NF:	3.9%	St. John's, NF:	9.3%
Saint John, NB:	3.8%	Saint John, NB:	9.7%
Charlottetown (PEI):	5.3%	Charlottetown (PEI):	8.2%
* Using month-over-month indices. Source: Statistics Canada			
** 12 month rolling average up to April 2021 is 0.9% (see non-pecuniary awards table).			

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UPDATING NON-PECUNIARY AWARDS FOR INFLATION (APRIL 2021, CANADA)

Year of Accident/ Year of Settlement or Trial	"Inflationary" Factors*	Non-Pecuniary Damages - Sample Awards				
		\$10,000	\$25,000	\$50,000	\$75,000	\$100,000
Avg. April 2020-April 2021	1.009	\$10,092	\$25,231	\$50,461	\$75,692	\$100,923
Avg. 2019-April 2021	1.014	\$10,136	\$25,340	\$50,680	\$76,020	\$101,360
Avg. 2018-April 2021	1.033	\$10,334	\$25,834	\$51,668	\$77,502	\$103,336
Avg. 2017-April 2021	1.057	\$10,567	\$26,418	\$52,837	\$79,255	\$105,674
Avg. 2016-April 2021	1.074	\$10,736	\$26,840	\$53,680	\$80,521	\$107,361
Avg. 2015-April 2021	1.089	\$10,890	\$27,224	\$54,448	\$81,672	\$108,896
Avg. 2014-April 2021	1.101	\$11,012	\$27,531	\$55,062	\$82,592	\$110,123
Avg. 2013-April 2021	1.122	\$11,222	\$28,055	\$56,111	\$84,166	\$112,221
Avg. 2012-April 2021	1.133	\$11,327	\$28,318	\$56,636	\$84,954	\$113,273
Avg. 2011-April 2021	1.150	\$11,499	\$28,748	\$57,496	\$86,244	\$114,992
Avg. 2010-April 2021	1.183	\$11,834	\$29,585	\$59,170	\$88,755	\$118,339
Avg. 2009-April 2021	1.204	\$12,045	\$30,112	\$60,225	\$90,337	\$120,449
Avg. 2008-April 2021	1.210	\$12,102	\$30,255	\$60,510	\$90,765	\$121,020
Avg. 2007-April 2021	1.237	\$12,367	\$30,917	\$61,835	\$92,752	\$123,670
Avg. 2006-April 2021	1.263	\$12,631	\$31,578	\$63,155	\$94,733	\$126,310
Avg. 2005-April 2021	1.288	\$12,884	\$32,209	\$64,419	\$96,628	\$128,837
Avg. 2004-April 2021	1.317	\$13,169	\$32,923	\$65,847	\$98,770	\$131,693
Avg. 2003-April 2021	1.341	\$13,414	\$33,535	\$67,071	\$100,606	\$134,141
Avg. 2002-April 2021	1.378	\$13,784	\$34,461	\$68,922	\$103,383	\$137,844
Avg. 2001-April 2021	1.410	\$14,096	\$35,240	\$70,480	\$105,719	\$140,959
Avg. 2000-April 2021	1.445	\$14,451	\$36,127	\$72,253	\$108,380	\$144,506
Avg. 1999-April 2021	1.484	\$14,844	\$37,111	\$74,222	\$111,333	\$148,444
Avg. 1998-April 2021	1.510	\$15,101	\$37,753	\$75,507	\$113,260	\$151,013
Avg. 1997-April 2021	1.525	\$15,252	\$38,129	\$76,259	\$114,388	\$152,517
Avg. 1996-April 2021	1.550	\$15,499	\$38,747	\$77,494	\$116,240	\$154,987
Avg. 1995-April 2021	1.574	\$15,743	\$39,358	\$78,715	\$118,073	\$157,430
Avg. 1994-April 2021	1.608	\$16,081	\$40,202	\$80,405	\$120,607	\$160,810
Avg. 1993-April 2021	1.611	\$16,107	\$40,268	\$80,536	\$120,805	\$161,073
Avg. 1992-April 2021	1.641	\$16,408	\$41,021	\$82,042	\$123,063	\$164,083
Avg. 1991-April 2021	1.665	\$16,652	\$41,630	\$83,261	\$124,891	\$166,522
Avg. 1990-April 2021	1.759	\$17,589	\$43,973	\$87,947	\$131,920	\$175,893
Avg. 1989-April 2021	1.843	\$18,431	\$46,078	\$92,157	\$138,235	\$184,314
Avg. 1988-April 2021	1.935	\$19,350	\$48,375	\$96,750	\$145,125	\$193,500
Avg. 1987-April 2021	2.013	\$20,127	\$50,318	\$100,635	\$150,953	\$201,270
Avg. 1986-April 2021	2.100	\$21,004	\$52,511	\$105,021	\$157,532	\$210,043
Avg. 1985-April 2021	2.188	\$21,885	\$54,712	\$109,424	\$164,135	\$218,847
Avg. 1984-April 2021	2.275	\$22,752	\$56,879	\$113,759	\$170,638	\$227,517
Avg. 1983-April 2021	2.373	\$23,731	\$59,328	\$118,655	\$177,983	\$237,311
Avg. 1982-April 2021	2.512	\$25,124	\$62,810	\$125,620	\$188,430	\$251,240
Avg. 1981-April 2021	2.783	\$27,828	\$69,569	\$139,138	\$208,707	\$278,276
Avg. 1980-April 2021	3.130	\$31,304	\$78,259	\$156,518	\$234,777	\$313,037
Avg. 1979-April 2021	3.447	\$34,475	\$86,187	\$172,374	\$258,561	\$344,747
Jan. 1978-April 2021	3.927	\$39,268	\$98,170	\$196,339	\$294,509	\$392,678

\$100,635= \$50,000 x 2.013 represents the dollar equivalent in April 2021 of \$50,000 based on inflation increases since 1987. Similarly, \$392,678 (= \$100,000 x 3.927) represents the dollar equivalent in April 2021 of \$100,000 in 1978 based on inflationary increases since the month of January 1978.

* Source: Statistics Canada, Consumer Price Index, monthly CPI release, rolling average (except for Jan. 1978).



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