Ontario Energy Board Cost of Capital – Update and macroeconomic outlook

prepared for the Ontario Energy Board by London Economics International LLC

October 16, 2020 (revised November 26, 2020)

London Economics International LLC ("LEI") was retained by the Ontario Energy Board ("OEB") to update the cost of capital parameters for its annual report. LEI was tasked with updating the return on equity ("ROE"), the deemed long-term debt rate ("DLTDR"), and the deemed short-term debt rate ("DSTDR"). To perform this exercise, LEI evaluated the OEB's current cost of capital policy and methodology, as well as the most recent regional and global macroeconomic trends driving changes in the parameters. The data used to calculate the cost of capital parameters is as of September 30th, 2020, which resulted in an ROE of 8.34%, with deemed long-term and short-term debt rates of 2.85% and 1.75% respectively. These values are down from LEI's previous annual note, where using data as of September 30th, 2019, the parameters were estimated at 8.52% (ROE), 3.21% (DLTDR), and 2.75% (DSTDR) respectively. Notably, the 100-basis point decline in the DSTDR can be attributed to the sharp decline in banker's acceptance ("BA") rates throughout the past twelve months.

The macroeconomic conditions that underpin this annual update contrast sharply from the 2019 update. The deterioration in the global economy due to a pandemic caused by COVID-19 has had widespread impact on all aspects of economic life. Since the last quarterly update, the third quarter of 2020 was characterized by stronger-than-expected growth, but a high level of uncertainty in the path to recovery remains. In line with LEI's previous quarterly update, we continue to provide special analysis focused on the extraordinary circumstances arising due to COVID-19.

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London Economics International LLC
Suite 1702 – 390 Bay Street
Toronto, ON M5H 2Y2
www.londoneconomics.com

contact:
Mugwe Kiragu/ Amit Pinjani
416-643-6610
amit@londoneconomics.com

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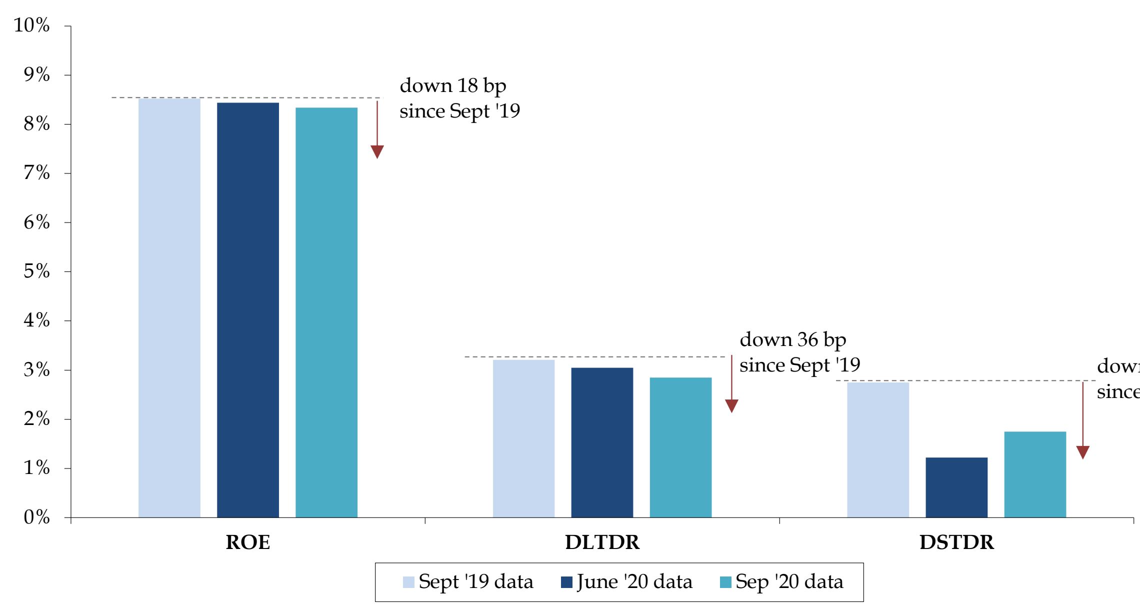
1 Executive summary

This report seeks to aid the Ontario Energy Board ("OEB") in its upcoming end of year meeting to discuss whether intervening changes should be considered in updating its cost of capital parameters. To inform these discussions, this report outlines:

- a recap of the previous cost of capital parameters and key macroeconomic events that have taken place since the 2020 update;
- a review of the economic impact of the global pandemic caused by COVID-19, the steps taken by governments and the uncertain path to recovery; and
- findings of the variance analysis conducted on the cost of capital parameters – namely the return on equity ("ROE"), the deemed long-term debt rate ("DLTDR"), and the deemed short-term debt rate ("DSTDR").

Through this analysis, LEI has determined the updated cost of capital parameters for applications with rates effective in 2020 as outlined in Figure 1 below.

Figure 1. Updated cost of capital parameters for rate changes effective in 2021



Source: LEI analysis

Compared with the OEB's previously approved cost of capital parameters for rates effective in 2020, LEI's current update sees the parameters declining by 18 basis points for the ROE, 36 basis points for the DLTDR, and 100 basis points for the DSTDR. The decline in all three parameters from the previous year is in line with expectations given the current macroeconomic climate, where central banks in Canada, as well as a number of major economies such as the US and the EU, have all sharply cut interest rates in response to the economic crisis resulting from the global pandemic. A summary of these changes is shown in Figure 2 below.

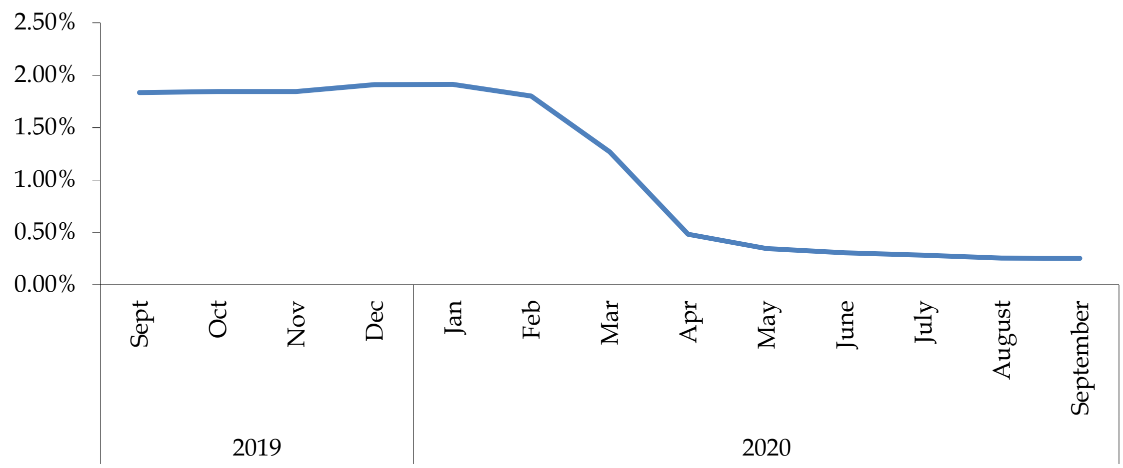
Figure 2. Comparison of cost of capital parameters to previous updates

Cost of capital parameter	Value based on September 2019 data	Value based on June 2020 data	Value based on September 2020 data	Difference (since June 2020)	Difference (since September 2019)
Return on equity	8.52%	8.44%	**8.34%**	-0.10%	-0.18%
Deemed long-term debt rate	3.21%	3.05%	**2.85%**	-0.20%	-0.36%
Deemed short-term debt rate	2.75%	1.22%	**1.75%**	0.53%	-1.00%

Source: LEI analysis.

The largest change relative to September 2019 is in the DSDTR, which has declined by 1%, and is material. The significant change in the DSTDR reflects the continued downward trend in banker's acceptance ("BA") rates, which decreased to an average of 0.25% in the month of September, down from 1.27% just 6 months ago in March 2020, and 1.83% in September 2019, as depicted in Figure 3 below. This decline reflects global uncertainty surrounding COVID-19 and is more acutely felt in near term metrics.

Figure 3. Average of 3-month BA rate, 2019 Q3 – 2020 Q3



Source: Investment Industry Regulatory Organization of Canada. *Canadian Bankers' Acceptance (BA) Rates – 3 Month Rates.*

Applying the updated 2021 parameters to the deemed capital structure (i.e. 40% equity, 56% long-term debt and 4% short-term debt) yields a WACC of 5%, down from 5.3% obtained using current (i.e. 2020) parameters. This decline is consistent with the decreases observed in the underlying parameters that support the ROE calculation such as the Long Canada Bond Forecast. Bond yields have fallen relative to last year, driven by worsening economic conditions, as investors seek safety in government bonds.

LEI notes that the widening of the spread of the 30-Year and 10-Year Bond Yield relative to 2020 somewhat mitigates the impact of the falling yields, as this spread is added to the 10-Year Bond forecast. As a result, the WACC has fallen by ~30 basis points, which can be considered reasonable given the reality of worsening economic conditions across the economy, balanced against the fact that utilities receive more stable returns than other entities and are already compensated for risk in the ROE.

2 Macroeconomic outlook in 2020/2021

In this section, we identify the most important factors impacting the global and regional economies in 2020 and consider the consensus research and expectations for 2021. We briefly recap the previous annual outlook and discuss the economic impact of the global pandemic due to COVID-19. Following this recap, the remaining sections are divided into the global and North American outlook, followed by Canadian and Ontario outlooks. A summary of this research is presented in Figure 4 below.

Figure 4. Summary of macroeconomic outlooks for 2020/2021

Region	Growth trend relative to 2019 update	Interest rate trends relative to 2019 update	Key factors
Global	Sharp economic decline; uneven recovery underway	Falling	• Widespread economic decline due to containment measures, weak private consumption and reduced investment by firms • Stronger-than-anticipated growth in Q3; uncertainty remains as cases begin to rise and consumer confidence remains low
Canada	Technical recession; slow recovery underway	Falling	• Economic crisis from global pandemic from COVID-19 has left Canada in technical recession • Large scale fiscal support and aggressive monetary policy has averted worst of crisis; stronger-than-expected rebound in Q3 • Slow recovery now underway, but threatened by sluggish investment and resurgence of infection rates
Ontario	Technical recession; uncertainty in recovery	n/a	• Ontario among hardest hit provinces by COVID-19, and enacted widespread lockdown measures • Strong Q3 performance suggests worst has passed, driven by retail consumption and rebounding housing market • "Second wave" of infections may threaten recovery

Sources: International Monetary Fund; Bank of Canada; Ontario Ministry of Finance.

2.1 Recap of 2019/2020 and the impact of COVID-19

In LEI's last annual briefing note to the OEB, submitted on October 17th 2019, the macroeconomic drivers in the economy were uncertainties resulting from trade tensions between major global economies (notably the US and China).[1] Regionally, we also saw a stronger-than-expected Canadian economic rebound[2] contrasted with a relatively austere fiscal environment in Ontario.[3] Consequently, the cost of capital parameters declined relative to the previous year: The calculated ROE declined by 46 basis points to 8.52%, the DLTDR declined by 92 basis points to 3.21%, and the DSTDR declined by 7 basis points to 2.75%.

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[1] International Monetary Fund. *World Economic Outlook: Growth Slowdown, Precarious Recovery (Update).* July 23, 2019.

[2] Ontario Ministry of Finance. *2019 Ontario Budget: Protecting What Matters Most.* April 11, 2019.

[3] Ibid.

Since the last annual update, macroeconomic conditions have declined precipitously. In the autumn and early winter, economic growth was strained by sustained trade tensions, and rapidly falling crude oil prices. Since then, however, the sharp economic decline has been driven almost exclusively by the global pandemic resulting from COVID-19. The virus causing COVID-19 is a novel coronavirus, and with no known cures, governments have employed shutdown measures of varying severity to limit its spread. The nature of the shutdowns and economic damage has seen the International Monetary Fund ("IMF") term this recession The Great Lockdown.[4] The spring months experienced the peak of the restrictions on economic activity, as infection rates climbed across the world. Since then, the global economy began a slow and cautious recovery, as health systems learn to cope with the disease, and the impact of public health measures begin to take hold.

In its most recent economic outlook, the IMF projects growth of ***negative 4.4%,*** a slight improvement from its June outlook of negative 4.9%.[5] The outlook for advanced economies remains dire, with the IMF projecting growth of negative 5.8% for 2020, before a rebound of 3.9% in 2021. Despite the partial re-opening of segments of the economy, the autumn months have seen rising infection rates which threaten the already uncertain recovery, and authorities consider reinstating lockdown measures. In many places such as Ontario, health authorities have already enacted restrictions in the largest population centers to various economic activities such as indoor dining, gyms, and casinos and have limited the size of social gatherings.[6]

In Canada, the impact of COVID-19 has also been severe. The first confirmed case of COVID-19 was recorded on February 20th, 2020, and as of October 13th 2020, just under 187,000 cases had been recorded with 9,654 deaths.[7] Ontario represents a significant portion of the total case count, with just under 61,000 (or 32%) of all cases, and 3,017 deaths as of this writing.

As noted in previous briefing notes, central banks and governments have taken several monetary and fiscal actions in response to the economic crisis resulting from the pandemic. In general, central bankers have lowered interest rates to record lows as governments adopt varying levels of fiscal stimulus. In subsequent sections, we discuss a number of these measures, and consider the impact on the outlook for 2021.

2.2 Global and North American outlook

The consensus on the global path to recovery is that it remains highly uncertain. The Organization for Economic Cooperation and Development's ("OECD") most recent economic outlook suggests

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[4] International Monetary Fund. *World Economic Outlook, April 2020: Chapter 1: The Great Lockdown.* April 2020.

[5] International Monetary Fund. *World Economic Outlook: A Long and Difficult Ascent.* October 2020.

[6] Government of Ontario website. *Ontario Implementing Additional Public Health Measures in Toronto, Ottawa and Peel Region.* Office of the Premier. October 9, 2020.

[7] Government of Canada website. *Coronavirus disease (COVID-19): Outbreak update.* Accessed on October 13, 2020. Accessed at: < https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection.html>

that consumer confidence is still fragile and investment intentions have weakened.[8] The scale of fiscal response in response to the pandemic has reached unprecedented levels – the IMF reported that as of September 2020, fiscal actions across the world amounted to close to $11.7 trillion, or ~ 12% of total GDP. For advanced economies, the IMF estimates discretionary fiscal response in the form of additional spending and foregone revenues to be around 9.3% of GDP.[9] These and other actions have raised global indebtedness to close to 100% of GDP, up from 83% in 2019.

For the US economy, stronger-than-expected growth in the third quarter was driven by a partial recovery in the job market and financial stimulus from governments that buttressed consumer spending. Having passed the nadir of the effects of COVID-19, the US economy saw a 30% quarter-over-quarter gain in real GDP at an annualized rate. However, the impact of the pandemic continues to be felt in the service and energy sectors; the former is struggling with physical distancing requirements, while the latter continues to be hampered by historically low prices.

However, a recent surge in infection rates of COVID-19 slowed the momentum of recovery. In addition, political stalemates and dampened expectations for a COVID-19 vaccine suggest that uncertainty is likely to persist through the rest of the year. In the US, the failure of the congressional leadership and executive to agree on a new round of fiscal support and election uncertainty may be a further drag on the economy, particularly as the unemployment rate remain well above pre-pandemic levels at 7.9%.[10]

The IMF anticipates an uneven and uncertain recovery, with its baseline projection assuming "*social distancing will continue into 2021 but will subsequently fade over time as vaccine coverage expands and therapies improve*."[11] Recent setbacks in ongoing COVID-19 vaccine trials at two large US pharmaceuticals suggests the economic recovery may remain beholden to the success of therapeutic and immunological breakthroughs.[12] As a result of the anticipated uncertain recovery period, advanced economies are not expected to exceed their pre-pandemic levels of economic output until 2022.

2.3 Canadian outlook

The outlook for the Canadian economy in 2021 will resemble that of the advanced economies that anticipate a rebound following the trough in the spring of 2020. The decline in 2020 Q2 was particularly sharp, falling 11.5% year-over-year, driven by falling consumption, investment, and trade, particularly with border closures in effect with the US. A review by Consensus Forecasts,

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[8] OECD (2020), *OECD Economic Outlook, Interim Report September 2020*, OECD Publishing, Paris, https://doi.org/10.1787/34ffc900-en.

[9] International Monetary Fund. *Fiscal Monitor: October 2020.* October 14, 2020.

[10] US Bureau of Labor Statistics. *The Employment Situation – September 2020*. October 2nd, 2020.

[11] International Monetary Fund. *World Economic Outlook: A Long and Difficult Ascent.* October 2020

[12] Financial Times. *Two Covid-19 drug trials halted on safety concerns.* Mancini, Donato & Stacey, Kiran. October 13, 2020.

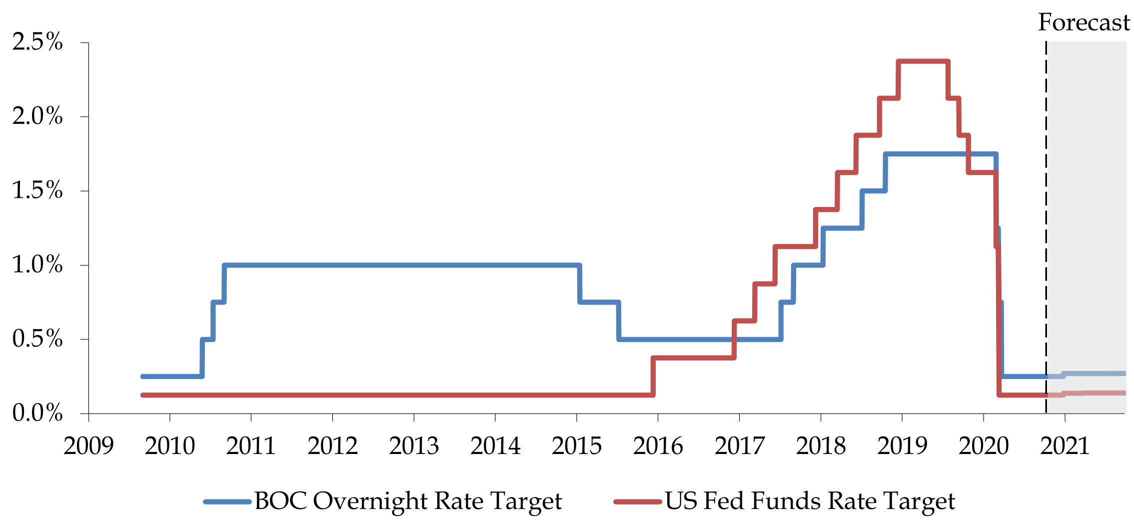
contact:
Mugwe Kiragu/Amit Pinjani
416-643-6610
amit@londoneconomics.com

which surveys over 250 financial and economic forecasters, suggests that Canadian GDP will contract by 6.0% in 2020, before rebounding partially by 5.2% in 2021.[13] This represents a stronger-than-expected economic rebound, and is attributable in part to large fiscal programs that have partly replaced lost incomes and subsidized wages, as well as monetary policy that has supported credit. We note that the federal government intends to extend emergency benefits to replace lost incomes for a further six months, for workers unable to work for reasons related to COVID-19.[14]

However, the path to recovery is anticipated to be uneven and uncertain, as described by Bank of Canada governor Tiff Macklem, *"…we don't expect the strong rebound we've seen to continue at the same pace in the months ahead."*[15]

We illustrate the sharp decline in interest rates in both Canada and the US, as monetary policy tools were rapidly employed in response to the economic impact of the Great Lockdown in North America. Consistent with the intentions of the Bank of Canada and in line with recent comments by US Federal Reserve Chair, Jerome Powell,[16] we anticipate the record low interest rate environment to remain a hallmark of the economic recovery.

Figure 5. Comparison of Canadian and US interest rates, 2009 Q4 - 2020 Q3



Notes: The US Fed Funds Rate Target is taken as the midpoint of the target range
Sources: Bank of Canada; US Federal Reserve Economic Data ("FRED")

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[13] Consensus Forecasts. *Surveys of International Economic Forecasts – G-7 & Western Europe.* Survey Date September 14, 2020.

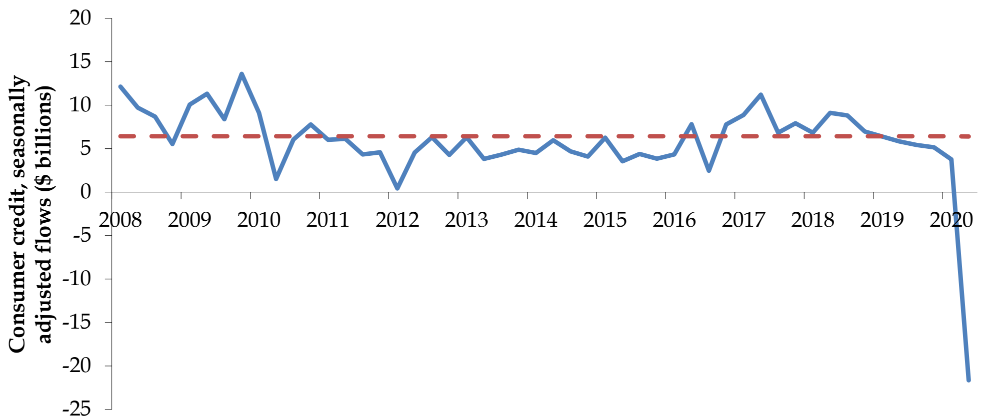
[14] Government of Canada. *Government of Canada introduces legislation to support Canadians through Recovery Benefits and extend access to funds for emergency measures.* September 24, 2020.

[15] Macklem, T. *Economic progress report: a very uneven recovery.* Remarks delivered to the Canadian Chamber of Commerce. September 10, 2020.

[16] Financial Times. *Fed signals rock-bottom rates until at least end of 2023.* Politi, James & Smith, Colby. September 16, 2023.

To provide further context to the macroeconomic outlook in Canada, LEI has also tracked movements in consumer credit levels as reported by Statistics Canada. While consumer credit data is lagging – the most recent release only provides data for the second quarter of 2020 – it provides context for market conditions since the onset of the COVID-19 pandemic. In the second quarter of 2020, consumer credit plummeted to negative $21 billion, down from $3.7 billion at the end of the first quarter of 2020 and over 400% below the average consumer credit levels seen over the 2008-2019 period.[17] These movements are shown in Figure 6 below.

Figure 6. Consumer credit, 2008 Q1 – 2020 Q2



Note: The latest consumer credit data was most recently published in September 2020 for 2020 Q2. Data for the third quarter is not yet available.

Source: Statistics Canada. *CANSIM Table 38-10-0238-01.* Accessed October 15, 2020.

We note that business confidence also remains low. In the previous briefing note, we discussed the results of the Bank of Canada's Business Outlook Survey ("BOS") for the Summer 2020 period, which showed that business confidence had fallen to levels not seen since the 2008 financial crisis.[18] While an updated BOS is yet to be published as of this writing, we anticipate the survey results will show a persistent downward trend in investment confidence. This would be consistent with the Consensus Forecasts reporting which projects a year-over-year decline in Machinery and Equipment Investment of -18.6%.[19] Persistently low crude oil prices will continue to drag the economy and the development of an effective vaccine will put a ceiling on the recovery of sectors involving close contact.

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[17] Statistics Canada. *National balance sheet and financial flow accounts, second quarter 2020.* June 12, 2020.

[18] The BOS is a quarterly survey summarizing the interviews conducted by the Bank's regional offices with the senior management of about 100 firms selected in accordance with the composition of the gross domestic product of Canada's business sector. The Summer 2020 survey was conducted from May 12th to June 5th, 2020. The BOS indicator is a summary measure that captures common movements from the main BOS questions and is above zero when business confidence is above its historical average. (Source: Bank of Canada)

[19] Consensus Forecasts. *Surveys of International Economic Forecasts – G-7 & Western Europe.* Survey Date September 14, 2020

2.4 Ontario outlook

In a year that begun with sluggish growth driven by tighter fiscal policy, trade uncertainty, and disruptions due to rail blockades, the impact of COVID-19 has been severe across all sectors. A stronger-than-expected recovery in the third quarter, however, suggests that there is a viable path to recovery, despite strong headwinds. The most recent growth forecasts for Ontario project a contraction of 5.6% in 2020, followed by a rebound of 4.9% in 2021. This is a less severe downturn than was previously projected, following a strong showing in Q3 driven by robust housing market sales and the largest job gains among all Canadian provinces.[20]

Ontario's recovery remains precarious, however, and the impact of the pandemic can still be seen in the sectors where operations were most hindered by restrictions and the global crisis, including export-dependent manufacturers. The latter group are anticipated to have the most uncertain recovery, as international trade remains disrupted, and weak global demand forces them to curtail output and delay investments.

Some analysts suggest that in the near term, the presence of snow-birds unable to travel will boost consumption, which may offset losses from sectors such as tourism and hospitality that have been severely disrupted by lockdown measures.[21] Strong demand in the housing market and its recovery have been greater-than-expected, but decreased levels of net migration into Ontario may slow additional growth driven by this sector into 2021.

Most recently, rising infection rates and case counts have led the provincial health authorities to declare a "second surge" casting doubt on the recovery.[22] It remains to be seen the extent to which government support will be sustained, despite provincial commitments to provide support amounting to 3% of GDP.[23] We conclude therefore that a sustained recovery will be beholden to public health outcomes and the success of the measures taken in response to the next waves of infections.

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[20] Taken as the average of forecasts published by CIBC, RBC, BMO, and TD. *See* TD Economics. *Provincial Economic Forecast: Not Out of the Woods Yet.* September 17, 2020; RBC Economics. *Provincial Outlook.* September 10, 2020; CIBC Economics. *Provincial Forecast.* September 25, 2020; BMO Capital Markets Economic Research. *Provincial Economic Outlook.* October 2, 2020.

[21] CIBC Economics. *Provincial Forecast.* September 25, 2020

[22] Ontario government. *Ontario Releases Updated COVID-19 Modelling for Second Wave*. September 30, 2020

[23] TD Economics. *Provincial Economic Forecast: Economies Turning the Corner but a Tough Road Lies Ahead.* June 17, 2020.

3 Cost of capital parameters – 2021 update

The OEB conducts its annual cost of capital parameter update using data as of September 30th of that year, with rates becoming effective on January 1st of the following year. The following subsections outline LEI's approach to updating the cost of capital parameters for the period beginning January 1st, 2021 using data as of September 30th, 2020.

Sustained actions by central banks and government policies enacted since the spring to counter the impact of economic crisis caused by the global pandemic mean that all three cost of capital parameters have declined relative to September 2019. This is consistent with the recent macroeconomic trends discussed in Section 2 above. It however remains to be seen how the uncertain recovery and additional government measures will be sustained in the future.

The utilities sector will also experience specific risks that may not be captured in economy-wide metrics such as increased uncertainty over load growth,[24] measures enacted to limit disconnection and/or rate increases, as well as requirements for physical distancing of operations and maintenance crews[25] which may all influence investor perception of utilities. The ability of utilities to borrow from lenders in this climate will be impacted by these factors, as noted by credit rating agencies.[26] Provided utilities are allowed a reasonable opportunity to recover their costs from ratepayers (including carrying costs), this should not impact their cost of capital.[27]

3.1 Return on equity

Using data as of September 30th, 2019 from the Bank of Canada, Consensus Economics, and Bloomberg, LEI calculated the updated ROE as **8.34%** which is 18 basis points lower than the ROE approved in the OEB's previous cost of capital parameter review (for rates effective in 2021). See Appendix A for a detailed illustration of this calculation.

The decline in ROE from last year's update is driven by lower actual and forecasted long-term bond yields. Actual average Government of Canada bond yields for the month of September declined from 1.36% in 2019 to 0.56% in 2020 for the 10-year bond; and from 1.56% in 2019 to 1.08% in 2020 for the 30-year bond. In turn, 30-year A-rated Canadian utility bonds saw their yields in the month of September decline from 3.08% on average in 2019 to 2.56% in 2020.

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[24] US Congressional Research Service. *COVID-19: Potential Impacts on the Electric Power Sector.* June 12, 2020.

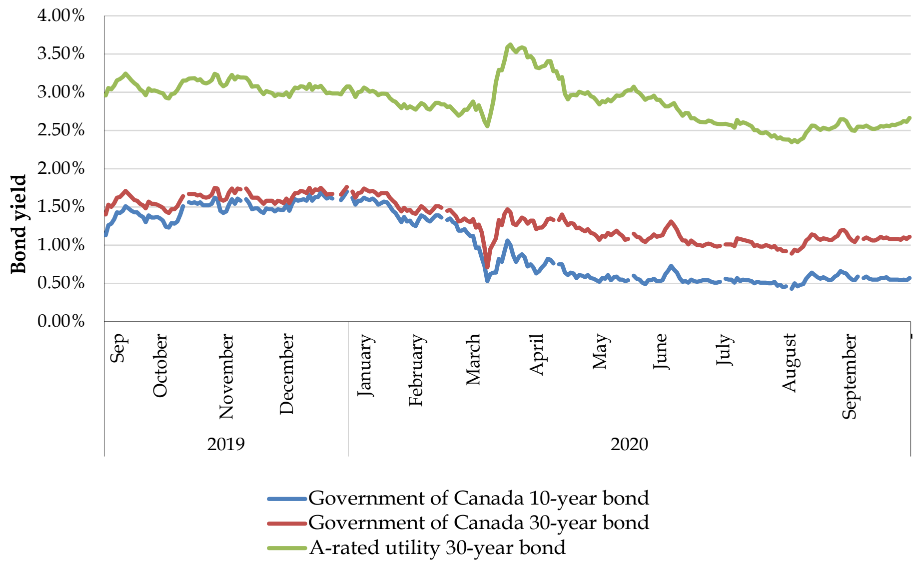
[25] Ibid.

[26] For instance, S&P commented the following on Canadian utilities: "*As a result, reduced load consumption, growing amounts of payment arrears, and pandemic-related expenses could have negative implications for the utilities' credit quality*." Source: S&P Global. *Can Canadian Regulated Utilities Sustain 2019 Improvements Amid COVID-19 And An Oil Price Slump?* June 11, 2020.

[27] We note that a forthcoming companion paper for the OEB will cover this topic in greater detail.

The OEB's methodology dictates the use of one month of data, i.e. September, but we note that falling bond yields have been a trend over the past 12 months as macroeconomic conditions have deteriorated. This is presented in Figure 7 below.

Figure 7. Canadian long-term bond yields, September 2019-September 2020



Sources: Bank of Canada; Bloomberg.

The overall decline in all long-term bond yields, as well as the calculated ROE, is consistent with the falling bond yields in the low-interest environment. With interest rates at historic lows[28] and rising uncertainty over the economic recovery, bond yields have fallen as investors seek safety in government-backed securities. In addition, LEI observes that the fixed components, such as the base ROE of 9.75% established with a base long-term Bank of Canada bond yield of 4.25% used in setting the ROE in the OEB methodology require review.[29]

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[28] It is notable that in July 2020 the UK regulator, the Office of Gas and Electricity Markets ("OFGEM") proposed an allowed baseline return on equity for network companies of 3.95% for the 2021-2026 period (RIIO-2). OFGEM stated: "*This proposed allowed return is almost 50% lower than under the previous price control (RIIO-1) and the lowest ever capital rate for energy network companies.*" The UK utilities have responded that the proposed low capital returns could hinder their ability to raise capital required for better service and greenhouse gas reductions. OFGEM's final decision is expected at year end, and utilities would be allowed to appeal. Source: OFGEM. *Ofgem proposes £25 billion to transform Great Britain's energy networks.* July 9, 2020.

[29] In the 2009 Cost of Capital for Ontario's Regulated Utilities report, OEB determined that it would periodically review its formulaic ROE adjustment mechanism, specifically every five years. Since then, OEB staff issued a 2016 update, which did not result in the revision of fixed base parameters. LEI observes that the second half of 2021 may be an appropriate time to perform this review as some measure of normality may have returned to the market.

3.2 Deemed long-term debt rate

Following LEI's update of the OEB's cost of capital parameter calculations, the deemed long-term debt rate was determined to be 2.85%, down 36 basis points compared to last year's update. See Appendix A for a detailed illustration of this calculation. This change in the DLTDR is driven by the declines in the long-term bond yields as discussed in Section 3.1 above.

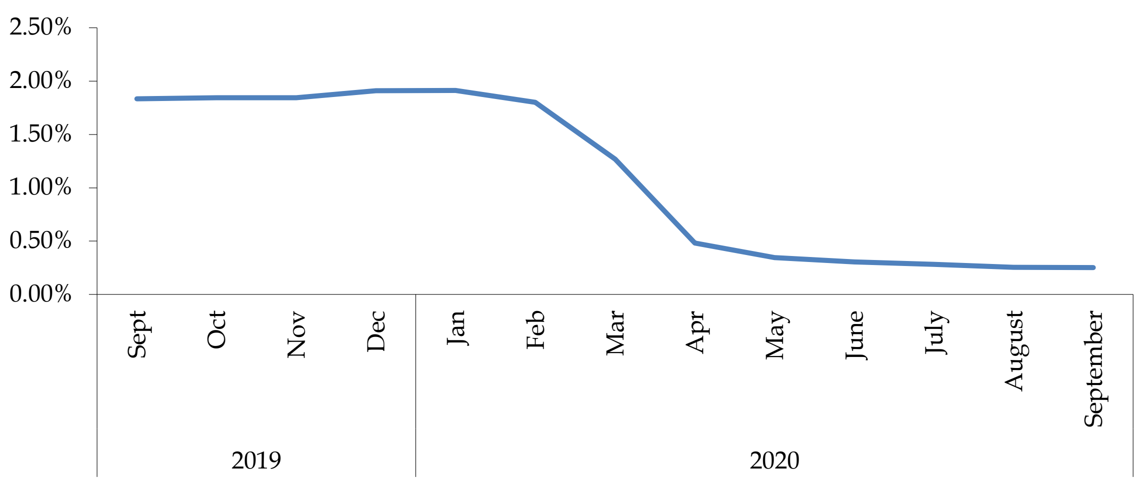
Specifically, the Long-Canada Bond Forecast ("LCBF") declined from 1.70% in 2019 to 1.37% in 2020, as the forecast for the 10-year Government of Canada bond yield persisted downwards.

3.3 Deemed short-term debt rate

The DSTDR reflects the interest rate that would be charged to an A-rated commercial business customer for a short-term (e.g. 3-month) loan by a commercial bank.[30] We note that historically, the DSTDR calculation incorporates the results of a confidential survey of prime Canadian banks, conducted by OEB Staff, whereby estimates for the spread of short-term debt issuances over Bankers' Acceptance ("BA") rates are provided.

The calculated deemed short-term debt rate is **1.75%**, down from **2.75%** in the previous update. The decline in the 3-month BA rate over the past 12 months, from just under 2% before the global pandemic, to nearly 0.25% over the last three months has been dramatic. This is shown in Figure 8 below, which plots average monthly 3-month BA rate data from the beginning of September 2019 to the end of September 2020.

Figure 8. 3-month Bankers' Acceptance rate, September 2019-September 2020



Sources: Bank of Canada; Investment Industry Regulatory Organization of Canada ("IIROC").

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[30] The EB-2009-0084, *Report of the Board, on the Cost of Capital for Ontario's Regulated Utilities*, December 11, 2009 refers to "short-term" loans. However, the OEB Staff Report issued on January 14, 2016 refers to "3-month loans". While the Board report is policy, LEI believes that it would be appropriate to define 'short-term' in this context.

In this 2021 update we observe that the ***annual spread over the BA rate***, which is estimated via a confidential survey of banks issuing short-term loans to good quality utilities, has increased by nearly 60 basis points. In the 2019 survey, the average spread was 91 basis points, and this has increased to 150 basis points. OEB staff have noted that in 2020, the survey responses from banks for the spread over the BA rate pertains to short-term loans (primarily one year), rather than 3-month short-term loans. This divergence in the terms of the debt makes it difficult to compare year-over-year and may account for the widening spread – it is a significant widening of the spread, nonetheless.[31]

In LEI's previous annual update, it was observed that the OEB staff should consider an alternative to corroborate the results from the confidential bank survey. We reiterate our observation that the OEB should ask that utilities report rates for their actual short-term (e.g. 3-month) debt issuances (including 3-month future contracts, if any) in the preceding year. This data would allow OEB to have more accurate information on actual cost of short-term debt relative to the BA rate, assisting the Board to set a rate consistent with actual cost of short-term borrowing for utilities.[32]

[31] LEI notes that following further discussions with the OEB, there has historically been a lack of specificity over the terms of the loans in the survey responses. Therefore, it is not clear if the 2019 survey also included one-year loans or not. While LEI acknowledges that the impact of deemed short-term debt rate on WACC is limited (given the 4% weighting), with this knowledge that historical bank surveys may have been for a variety of terms, LEI observes there is a stronger case for the OEB to collect actual short-term debt rates to corroborate the anonymous survey, and to tighten up language in the survey so that terms are well defined.

[32] LEI does not believe that this is an administratively burdensome task. LEI has provided this observation as a tool to corroborate the anonymous survey from banks. This survey of utilities could be backwards-looking and be administered similarly to the confidential survey of banks e.g. requesting the few largest utilities, followed by removal of outliers.

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4 Appendix A: Cost of Capital Parameter Calculations

Consistent with the OEB methodology detailed in the annual update to parameters, LEI has calculated the values for ROE, LTDR and STDR as illustrated in Figure 9 and Figure 10 below.

Figure 9. ROE and LTDR calculation

Cost of Capital Parameter Calculations (For rate changes effective in 2021)

Step 1: Analysis of Business Day Information in the Month

Month: **September 2020**

	Day	Bond Yields %			Bond Yield Spreads %	
		Govt. of Canada		A-rated Utility	30-yr. Govt. over 10-yr Govt.	30-yr. Util. over 30-yr Govt.
		10-yr	30-yr	30-yr		
1	1-Sep-20	0.58	1.10	2.55	0.52	1.45
2	2-Sep-20	0.55	1.06	2.50	0.51	1.44
3	3-Sep-20	0.54	1.04	2.49	0.50	1.45
4	4-Sep-20	0.59	1.10	2.55	0.51	1.45
5	5-Sep-20					
6	6-Sep-20					
7	7-Sep-20					
8	8-Sep-20	0.57	1.08	2.55	0.51	1.47
9	9-Sep-20	0.59	1.10	2.56	0.51	1.46
10	10-Sep-20	0.56	1.08	2.54	0.52	1.46
11	11-Sep-20	0.55	1.06	2.52	0.51	1.46
12	12-Sep-20					
13	13-Sep-20					
14	14-Sep-20	0.55	1.06	2.52	0.51	1.46
15	15-Sep-20	0.55	1.08	2.53	0.53	1.45
16	16-Sep-20	0.57	1.11	2.56	0.54	1.45
17	17-Sep-20	0.57	1.09	2.55	0.52	1.46
18	18-Sep-20	0.58	1.10	2.56	0.52	1.46
19	19-Sep-20					
20	20-Sep-20					
21	21-Sep-20	0.55	1.08	2.55	0.53	1.47
22	22-Sep-20	0.55	1.08	2.57	0.53	1.49
23	23-Sep-20	0.55	1.08	2.57	0.53	1.49
24	24-Sep-20	0.55	1.08	2.59	0.53	1.51
25	25-Sep-20	0.54	1.07	2.59	0.53	1.52
26	26-Sep-20					
27	27-Sep-20					
28	28-Sep-20	0.55	1.10	2.62	0.55	1.52
29	29-Sep-20	0.54	1.08	2.61	0.54	1.53
30	30-Sep-20	0.57	1.11	2.66	0.54	1.55
		0.56	**1.08**	**2.56**	**0.52**	**1.48**
	Sources:	Bank of Canada		Bloomberg		

Step 2: 10-Year Government of Canada Bond Yield Forecast

Source: Consensus Forecasts   Survey Date: September 14, 2020

	3-month	12-month	Average	
September 2020	0.700	1.000	**0.850**	%

Step 3: Long Canada Bond Forecast

10-yr Govt. of Canada Bond Forecast (from Step 2)	0.850	%
Actual Spread of 30-year over 10-year Government of Canada Bond Yield (from Step 1)	0.523	%
Long Canada Bond Forecast (LCBF)	**1.373**	%

Step 4: Return on Equity (ROE) Forecast

Initial ROE			9.75	%
Change in Long Canada Bond Yield Forecast from September 2009				
LCBF (September 2020) (from Step 3)	1.373	%		
Base LCBF	4.250	%		
Difference	-2.877	%		
0.5 x Difference			-1.438	%
Change in A-rated Utility Bond Yield Spread from September 2009				
A-rated Utility Bond Yield Spread (September 2020) (from Step 1)	1.477	%		
Base A-rates Utility Bond Spread	1.415	%		
Difference	0.062	%		
0.5 x Difference			0.031	%
Return on Equity based on September 2020 data			**8.34**	%

Step 5: Deemed Long Term Debt Rate Forecast

Long Canada Bond Forecast for September 2020 (from Step 3)	1.373	%
A-rated Utility Bond Yield Spread September 2020 (from Step 1)	1.477	%
Deemed Long-term Debt Rate based on September 2020 data	**2.85**	%

Source: OEB. *Cost of Capital Parameter Updates*. <https://www.oeb.ca/industry/rules-codes-and-requirements/cost-capital-parameter-updates>

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Figure 10. STDR calculation

Cost of Capital Parameter Calculations (For rate changes effective in 2021)

Step 1: Average annual spread over Banker's Acceptance

A.		Average Spread over 90-day Bankers Acceptance		Date of input
	Bank 1	150	bps	Jul/Aug 2020
	Bank 2	130	bps	Jul/Aug 2020
	Bank 3	150	bps	Jul/Aug 2020
	Bank 4	178.75	bps	Jul/Aug 2020
	Bank 5		bps	
	Bank 6		bps	

B. Discard high and low estimates
If less than 4 estimates, take average without discarding high and low.

Number of estimates	4	
High estimate	178.75	bps
Low estimate	130	bps

C.

Average annual spread	150	bps

Step 3: Deemed Short-Term Debt Rate Calculation

Average annual spread	1.50%
Average Banker's Acceptance Rate	0.25%
Deemed Short Term Debt Rate	**1.75%**

Step 2: Average 3-month Banker's Acceptance Rate

	Month:	September 2020
	Day	Bankers' Acceptance Rate (%) 3-month
1	1-Sep-20	0.25%
2	2-Sep-20	0.25%
3	3-Sep-20	0.25%
4	4-Sep-20	0.24%
5	5-Sep-20	
6	6-Sep-20	
7	7-Sep-20	
8	8-Sep-20	0.25%
9	9-Sep-20	0.25%
10	10-Sep-20	0.26%
11	11-Sep-20	0.25%
12	12-Sep-20	
13	13-Sep-20	
14	14-Sep-20	0.25%
15	15-Sep-20	0.25%
16	16-Sep-20	0.25%
17	17-Sep-20	0.25%
18	18-Sep-20	0.25%
19	19-Sep-20	
20	20-Sep-20	
21	21-Sep-20	0.25%
22	22-Sep-20	0.25%
23	23-Sep-20	0.25%
24	24-Sep-20	0.25%
25	25-Sep-20	0.25%
26	26-Sep-20	
27	27-Sep-20	
28	28-Sep-20	0.26%
29	29-Sep-20	0.25%
30	30-Sep-20	0.26%
		0.25%

Source: OEB. *Cost of Capital Parameter Updates*. <https://www.oeb.ca/industry/rules-codes-and-requirements/cost-capital-parameter-updates.

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London Economics International LLC
Suite 1702 – 390 Bay Street
Toronto, ON M5H 2Y2
www.londoneconomics.com

contact:
Mugwe Kiragu/Amit Pinjani
416-643-6610
amit@londoneconomics.com