Cost of capital parameters update and macroeconomic outlook – Q2 2024

prepared for the Ontario Energy Board by London Economics International LLC

August 6th, 2024

London Economics International LLC ("LEI") was retained by the Ontario Energy Board ("OEB") staff to monitor macroeconomic conditions to ensure the cost of capital parameters for 2024 are aligned with current outlooks. Compared to the cost of capital parameters approved by the OEB in October 2023, there is a slight increase of 0.02% in return on equity ("ROE") driven by the increase in deemed long-term debt rate ("DLTDR") of 0.05%. The deemed short-term debt rate ("DSTDR") has inched down by 0.39% (5.83% in June 2024 compared to 6.23% in September 2023). As inflation worries are diminishing, the DSTDR is expected to continue declining in 2024 as the Bank of Canada is widely expected to reduce their short-term interest rates further following reduction of 50 basis points in June 2024 and July 2024 (i.e., 25 basis points in each of June and July). In the US, the Federal Reserve is currently expected to cut its policy rate in September 2024.

Table of contents

Table of figures

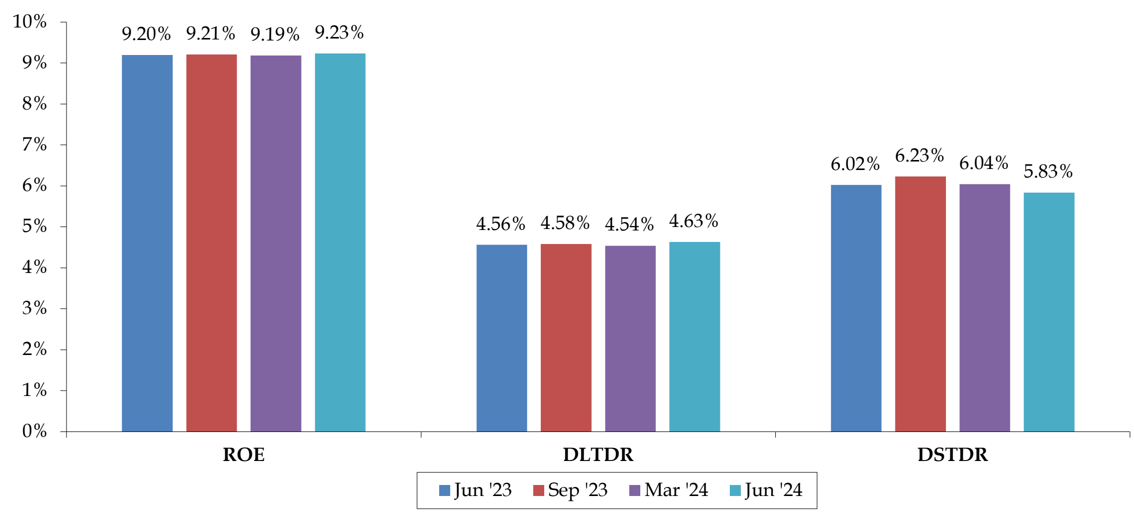
1 Executive summary

This quarterly report provides an update for OEB staff on recent macroeconomic trends on a global, North American, and provincial scale on cost of capital parameters. Specifically, this report contains:

- a recap of the key macroeconomic events in the second quarter of 2024;
- a review of the ongoing economic impact of the major driver of global economic uncertainty, i.e., normalizing (but still above target) global inflation and the responses from central banks of major developed countries, including Canada, to combat it; 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");[1]

In addition to the review of current macroeconomic developments, LEI has compared the parameters with data as of June 30th, 2023, September 30th, 2023, and March 31st, 2024, where possible. The results of this analysis are outlined in Figure 1 below.

Figure 1. Summary of cost of capital parameters using data as of June 30th, 2024



Source: LEI analysis.

On October 31st, 2023, the OEB issued the following approved cost of capital parameters for rates effective in 2024 (using data as of September 30th, 2023): ROE of 9.21%, DLTDR of 4.58%, and

[1] The existing OEB cost of capital policy utilizes a modified capital asset pricing model ("CAPM") methodology and an equity risk premium ("ERP") approach. The three parameters (ROE, DLTDR, and DSTDR) are set formulaically. The results are reviewed and approved by the OEB annually and compared against short-term forecasts of macroeconomic conditions to ensure the derived values are reasonable based on current and forecasted future macroeconomic conditions. (Source: OEB. EB-2009-0084: Report of the Board on the Cost of Capital for Ontario's Regulated Utilities. December 11th, 2009.)

DSTDR of 6.23%.[2] Compared with these values, LEI's current update using data as of June 30th, 2024, calculates a slight increase in ROE (of 0.02%) and DLTDR (of 0.05%), and a decrease in DSTDR (of 0.39%). The slightly higher ROE and DLTDR are primarily driven by a higher Long Canada Bond Forecast ("LCBF"). The decrease in DSTDR is driven mainly by the Bank of Canada's ("BoC's") June policy rate cut of 0.25% or 25 basis points.

In previous updates, LEI noted that the yield curve for BoC's long-term (10-year) and short-term (2-year) bonds has been inverted since July 2022, i.e., yields are higher for short-term bonds. The yield curve continues to be inverted (as of July 16th, 2024). As noted in the previous updates, this is uncommon as investors typically expect higher yields for longer-term bonds, consistent with higher risks associated with longer maturity terms. However, the margins observed in 2024 (as of July 16th, 2024) have reduced compared to 2023 (average spread of -0.62% in 2024 vs. -0.91% in 2023).[3] The yields are expected to normalize in 2024 if central banks reduce the short-term interest/policy rates in line with expectations. A summary of changes to the cost of capital parameters is shown in Figure 2 below.

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

Parameter	Value based on June 2023 data	Value based on September 2023 data	Value based on June 2024 data	Difference (since September 2023)	Difference (since June 2023)
Return on equity	9.20%	9.21%	**9.23%**	0.02%	0.03%
Deemed long-term debt rate	4.56%	4.58%	**4.63%**	0.05%	0.07%
Deemed short-term debt rate	6.02%	6.23%	**5.83%**	-0.39%	-0.19%

Source: LEI analysis.

In the previous Q1 2024 update, LEI noted that US investors have significantly pared their expectations to 25-50 basis points ("bps") of cuts by the end of 2024 (compared to rate cut expectations of 75-100 bps at the end of 2023), however Canadian investors expected 50-75 bps of rate cuts by the end of 2024 following a series of favourable inflation indicators.[4] Following favourable indicators and concerns about a slowing job market in Q2 2024, US investors now expect 50-75 bps of rate cuts in 2024.[5,6]

LEI emphasized in the previous update that an underperforming economy will likely influence the BoC to implement faster rate reductions than the US.[7] The BoC reduced the policy rate by 0.25% (from 5% to 4.75%) in June 2024, with an additional cut of 0.25% (to 4.50%) in July 2024.[8] The futures prices for the 3-month Canadian Overnight Repo Rate Average ("CORRA") indicate

[2] OEB. 2024 Cost of Capital Parameters. October 31st, 2023.

[3] The spreads are calculated by comparing daily yields for Government of Canada ("GoC") 10-year bonds (series V39055) with daily yields for GoC 2-year bonds (series V39051). Source: Bank of Canada.

[4] Bloomberg. Canada Inflation Ticks Up to 2.9% on Higher Gas Prices. April 16th, 2024.

[5] The Economist. The cracks in America's ultra-strong labour market. June 13th, 2024.

[6] CME Group. CME FedWatch Tool. Accessed on July 16th, 2024.

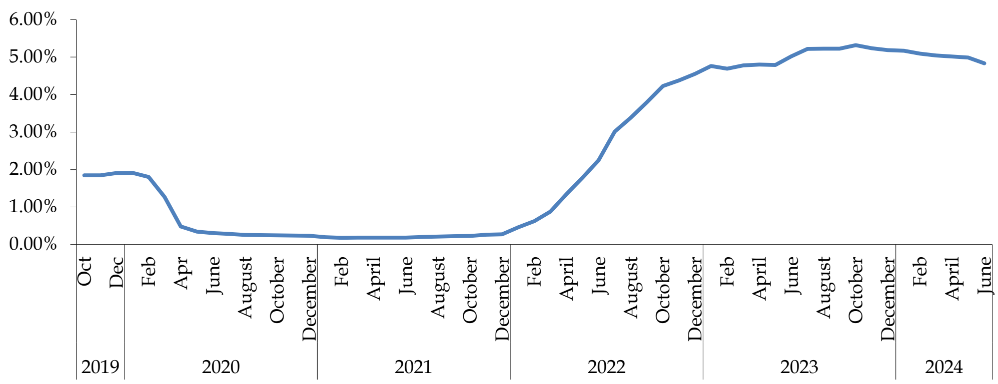
[7] Ibid.

[8] Bank of Canada. Bank of Canada reduces policy rate by 25 basis points to 4½%. July 24th, 2024.

that investors expect additional rate cuts of 25-50 bps for the remainder of 2024, adding up to 75-100 bps of rate cuts in total for 2024.[9]

Between Q4 2021 and Q4 2023, the steep increase in the DSTDR was driven by a sustained increase in the Bankers' Acceptance ("BA") rates.[10] During this period, the average 3-month BA rate increased from 0.25% in Q4 2021 to 5.25% in Q4 2023.[11,12] However, the average 3-month BA rate has dropped to 4.95% in Q2 2024 (4.83% in June 2024 following the BoC rate cut). As highlighted in the previous update, BA rates are highly correlated with changes in policy interest rates set by the BoC. DSTDR, in turn, is primarily influenced by these changes. As such, BA rates are expected to drop further in 2024. The progression of BA rates since Q4 2019 is shown in Figure 3.

Figure 3. 3-month BA rate, Q4 2019 – Q2 2024 (monthly average)



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

The monthly changes in the Federal Reserve's ("Fed's") preferred inflation indicator in the US, personal consumption expenditures excluding food and energy (or "core PCE"), have been volatile in 2024 – significantly higher than expected during January-April 2024 but close to the Fed target of 2% in May 2024. The core PCE in June 2024 will likely be lower than the Fed's target based on the highly favourable Consumer Price Inflation ("CPI") figures in June 2024 (annualized monthly change of 0.78% for core CPI). The monthly data is likely being distorted by seasonal

[9] TMX. Historical Data: CRA – Three-Month CORRA Futures. As of July 15th, 2024.

[10] Major Canadian banks will not issue BAs after the cessation of the Canadian Dollar Offered Rate's ("CDOR") publication in June 2024. CDOR was the most commonly used BA benchmark, and most BA facilities referenced CDOR as the interest rate benchmark for establishing the base borrowing rate to which a stamping fee was added. In July 2023, the Canadian Alternative Reference Rate ("CARR") working group published a set of documents to support the transition of the Canadian loan market from CDOR to the CORRA. LEI, in its expert report filed in the 2024 Generic Proceeding, has recommended that the DSTDR be based on a CORRA-based alternative.

[11] Investment Industry Regulatory Organization of Canada. Canadian Bankers' Acceptance (BA) Rates – 3 Month Rates. Accessed on January 25th, 2024.

[12] The average daily BA rates for the October 2021 to December 2021 period considered as Q4 2021; and average daily BA rates for the October 2023 to December 2023 period considered as Q4 2023.

patterns.[13] The core PCE has consistently declined on an annual basis since the highs observed in 2022. The annual change in core PCE was 2.57% in May 2024, the lowest since March 2021.

LEI noted in the previous update that the stubborn inflation numbers in the US are partly due to stronger economic indicators than in Canada. This still holds as of this update; however, the economic indicators for the US have weakened slightly. The annualized GDP growth for Q1 2024 was softer at 1.4% (compared to the average of 3.1% in 2023).[14] The unemployment rate has also ticked up to 4.1% in June 2024 (compared to the average of 3.6% in 2023).[15] LEI has consistently highlighted that the "last mile" reduction of inflation (from 3% to 2%) may be the hardest, particularly in the US, due to strong economic indicators and wage growth.

The wage growth (the primary indicator of potentially sticky inflation) remains somewhat faster, given historical relationships with job market churn, although the gap is not quite as severe as it has been in the past.[16] As such, markets strongly expect a policy rate cut by the Fed in September.

The potential risks for the US remain strong, considering the uncertainty regarding US federal elections. If Mr. Trump is elected, based on his proposed policies, most economists expect significantly higher deficits and faster inflation.[17] Mr. Trump has also repeatedly threatened the Fed's independence with respect to monetary policy decisions.[18]

Applying the updated parameters (using June 2024 data) to the deemed capital structure (i.e., 40% equity, 56% long-term debt, and 4% short-term debt) yields a WACC of 6.52%, a slight increase of 0.02% from the 6.50% WACC determined in the September 2023 update.

LEI has highlighted in the previous updates that energy prices (particularly natural gas prices), which were primarily responsible for the inflation peaks in mid-2022, are now comparable to pre-pandemic levels. In North America, since January 2023, natural gas prices have been consistently lower than the 20-year average of $5.3/MMBtu and the 10-year average of $4.2/MMBtu. As of June 28th, 2024, the observed price was $2.55/MMBtu.

[13] The Overshoot. How Many Benign Inflation Prints Are Enough? July 14th, 2024.

[14] St. Louis Fed. Real Gross Domestic Product (GDPC1). Accessed on July 18th, 2024.

[15] St. Louis Fed. Unemployment Rate (UNRATE). Accessed on July 18th, 2024.

[16] The Overshoot. How Many Benign Inflation Prints Are Enough? July 14th, 2024.

[17] The Wall Street Journal. Economists Say Inflation Would Be Worse Under Trump Than Biden. July 11th, 2024.

[18] Bloomberg. What a Reelected Trump Could and Couldn't Do to Sway the Fed. July 18th, 2024.

2 Macroeconomic outlook

In this section, we identify the most important factors impacting the global and regional economies in the second quarter of 2024 and consider the consensus research and expectations for the rest of 2024 and following recent developments. A summary of this research is presented in Figure 4 below.

Figure 4. Summary of macroeconomic outlooks for 2024

Region	Growth trend relative to previous briefing note	Interest rate trend relative to previous briefing note	Inflation trends relative to previous briefing note	Key factors
Global	No change	Short-term rates are trending lower from peaks, and are expected to decrease further (but slower than anticipated)	Trending lower, but slowly	▪ Natural gas prices remain significantly below their long-term average in North America ▪ US macroeconomic indicators have weakened (relative to 2023, but still strong); combined with favourable inflation figures in May and June, a policy rate cut by the Fed is highly likely in September ▪ Trade-related tensions remain between China and the US/EU ▪ Emerging economies are expected to grow slightly faster than anticipated in 2024 and 2025
Canada	Lower	Short-term rates are trending lower from peaks, and are expected to decrease further in 2024 and 2025	Two months of mixed inflation data after highly favourable inflation indicators January-April 2024	▪ The trajectory of Bank of Canada may have been slightly complicated by mixed inflation data in May and June 2024, but investors expect 0.25%-0.50% of additional cuts in 2024 following a 0.25% cuts in June 2024 and July 2024 ▪ The rate cuts are likely to provide a meaningful boost to growth only in 2025
Ontario	Slightly higher	n/a	Follows national inflation	▪ Unemployment rate has increased to 7% in June 2024, the highest since January 2022 ▪ A healthy gain is expected in Ontario's home sales in the back half of 2024 amid falling interest rates

2.1 Global and North American outlook

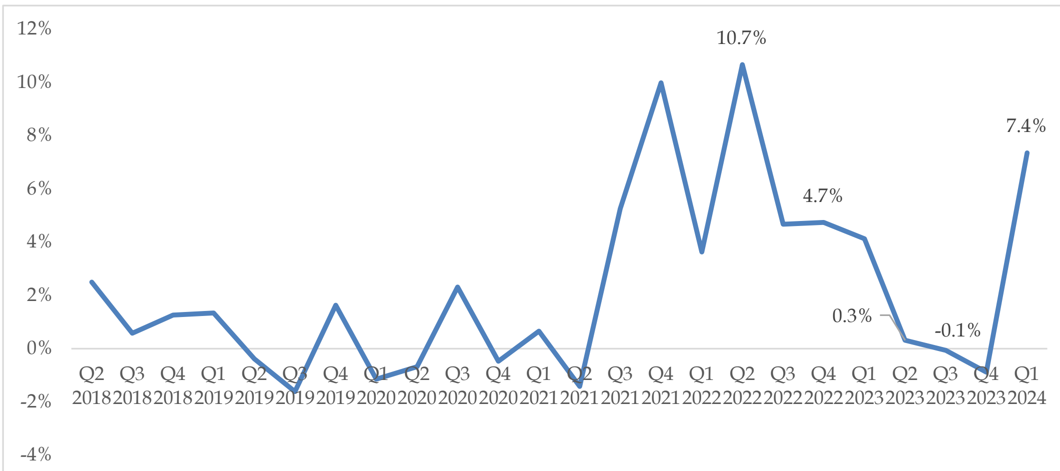
In its latest July 2024 update, the International Monetary Fund ("IMF") has mostly retained its the global GDP growth outlook for 2024 and 2025.[19] However, it has emphasized upside risks to inflation (primarily driven by services price inflation) *raising the prospect of higher-for-even-longer interest rates*.[20]

[19] International Monetary Fund. World Economic Outlook . July 16th, 2024.

[20] Ibid.

The New York Fed's Global Supply Chain Pressure Index ("GSCPI") indicates that supply chain pressures remain near their long-term average.[21] However, the prices for 'power, distribution and other transformers' in Canada have increased significantly in Q1 2024 after normalizing to pre-pandemic levels in 2023. LEI will continue to monitor this data series to assess if the latest data is an outlier. However, stories of equipment shortages (particularly shortages in electrical equipment such as transformers and switchgear) persist, which may indicate that the recent spike may not be an outlier. [22,23]

Figure 5. Quarterly price growth for 'Power, distribution and other transformers' in Canada (Q2 2018 – Q1 2024)



Note: The latest data available for the above series is for Q1 2024 (as of July 18th, 2024).

Source: Statistics Canada. Machinery and equipment price index, by commodity, quarterly. Release date: Release date: 2024-05-27.

The US economic indicators have moderated slightly compared to 2023:

(i) The annualized GDP growth for Q1 2024 was weaker at 1.4% (compared to the average of 3.1% in 2023).[24] However, it is worth noting that the Atlanta Fed's GDPNow indicator forecasts 2.7% annualized growth in Q2 2024;[25]

(ii) The unemployment rate, which had been in a narrow range of 3.7% to 3.9% from August 2023 to April 2024, has moved up to 4.1% in June 2024;[26]

[21] Federal Reserve Bank of New York. Global Supply Chain Pressure Index (GSCPI). Accessed on July 18th, 2024.

[22] Bloomberg. Odd Lots Newsletter: Switchgear Shortage Says a Lot About the Economy. April 12th, 2024.

[23] Barron's. There's a Shortage of Electrical Wires, Transformers. That's Good for These Stocks. January 7th, 2024.

[24] St. Louis Fed. Real Gross Domestic Product (GDPC1). Accessed on July 18th, 2024.

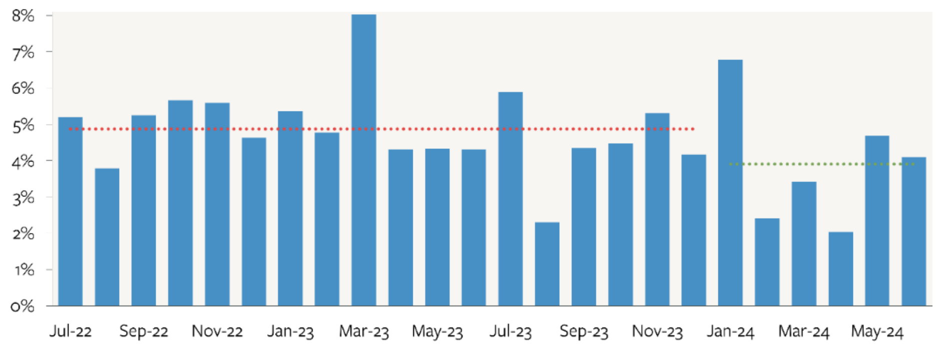
[25] Federal Reserve Bank of Atlanta. GDPNow. Accessed on July 18th, 2024.

[26] St. Louis Fed. Unemployment Rate (UNRATE). Accessed on July 18th, 2024.

(iii) Nonfarm business sector labour productivity, which declined by 1.9% in 2022, expanded by 1.3% in 2023 (with a 3.2% expansion in Q4 2023). However, the growth slowed to 0.2% in Q1 2024;[27] and

(iv) Wage growth has generally slowed compared to 2023 (see Figure 6 below) while remaining slightly higher compared to pre-pandemic trends.

Figure 6. US hourly non-supervisory pay in private industries, excluding leisure, hospitality and retail (annualized monthly change)



Note: The typical worker's wage grew almost 5% annually from July 2022 to December 2023 (red dotted line). Wage growth so far in 2024 has averaged 3.9% annualized (green dotted line).

Source: The Overshoot. How Many Benign Inflation Prints Are Enough? July 14th, 2024.

The monthly changes in the core PCE have been volatile in 2024. They have been significantly higher than expected during January-April 2024 but close to the Fed target of 2% in May 2024. The core PCE in June 2024 is also expected to be lower than the Fed's target based on the highly favourable CPI figures in June 2024 (annualized monthly change of 0.78% for core CPI). The monthly data is likely being distorted by seasonal patterns.[28] Since the highs observed in 2022, the core PCE has consistently declined annually. The annual change in core PCE was 2.57% in May 2024, the lowest since March 2021 (see Figure 7).

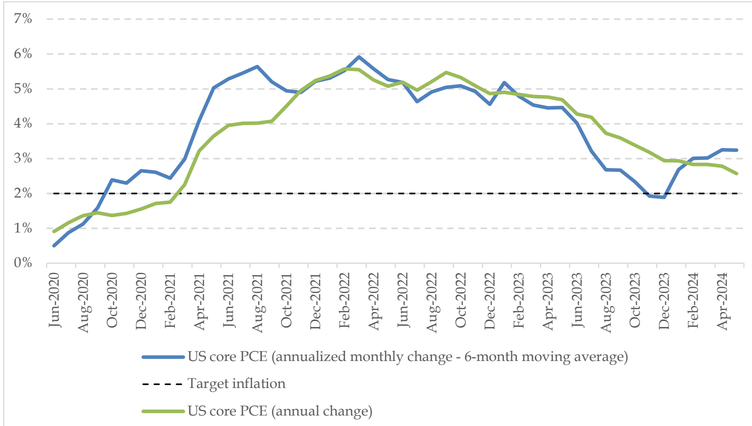
The "last-mile" reduction in inflation (from ~3% to the Fed's target of 2%) may take longer than anticipated, but the softer economic indicators, combined with gradually declining inflation, have led the markets to expect a policy rate cut of 25 bps in September 2024 (~94% probability implied by the 30-day Fed Funds futures prices).[29]

[27] US Bureau of Labor Statistics. Economics News Release – First Quarter 2024, Revised. June 6th, 2024.

[28] The Overshoot. How Many Benign Inflation Prints Are Enough? July 14th, 2024.

[29] CME Group. Fed Watch. Accessed on July 18th, 2024.

Figure 7. Changes in the Fed's preferred inflation measure, core PCE



Source: St. Louis Fed.

LEI noted in the previous report that one consequence of higher-for-longer interest rates has been the soaring interest costs for the US government. According to the US Congressional Budget Office ("CBO"), net interest outlays as a share of GDP could reach 3.9% by 2030, the highest observed since at least 1962.[30]

Considering the uncertainty regarding US federal elections, the risks of interest rates remaining higher for even longer may increase if Donald Trump is elected president in November, particularly with Republican majorities in the US House of Representatives and the US Senate.[31] Based on his proposed policies, most economists expect significantly higher deficits and inflation.[32] Mr. Trump has also repeatedly threatened the Fed's independence concerning monetary policy decisions and has proposed *draconian* restrictions on both legal and illegal immigration, which may lead to a nationwide worker shortage if enacted.[33,34]

The IMF (July 2024 update) has revised the forecast for growth in emerging markets and developing economies slightly upward by 0.1% in 2024 and 2025 (compared to its previous April 2024 update).[35] The projected increase is powered by stronger activity in Asia, particularly China and India. For China, the growth forecast is revised upward to 5% in 2024 (from 4.6% in April 2024), primarily because of a rebound in private consumption and strong exports in Q1 2024. However, Chinese GDP is projected to slow to 4.5% in 2025 and continue to decelerate over the

[30] Axios. The cost of interest on U.S. debt is soaring. February 8th, 2024.

[31] The Economist. Donald Trump has a clear lead over Joe Biden. Accessed on July 18th, 2024.

[32] The Wall Street Journal. Economists Say Inflation Would Be Worse Under Trump Than Biden. July 11th, 2024.

[33] Bloomberg. What a Reelected Trump Could and Couldn't Do to Sway the Fed. July 18th, 2024.

[34] The New York Times. Sweeping Raids, Giant Camps and Mass Deportations: Inside Trump's 2025 Immigration Plans. November 11th, 2023.

[35] International Monetary Fund. World Economic Outlook . July 16th, 2024.

medium term to 3.3% by 2029 because of headwinds from aging and slowing productivity growth.[36]

LEI has consistently highlighted the key structural issues in China's economy in previous updates i.e., over-reliance on exports due to domestic underconsumption, the inordinate influence of the housing sector on the overall economy, and worsening demographics.[37,38,39] Trade tensions between China and the G7 economies also continue to increase. The European Union ("EU") launched investigations into Chinese exports of electric vehicles and wind turbines.[40] The investigations have led to new tariffs on individual manufactures ranging from 17.4% to 37.6%, which is on top of a 10% duty that was already in place for all electric cars imported from China.[41] The US Treasury Secretary has also increasingly expressed concerns, stating, "*…when the global market is flooded by artificially cheap Chinese products, the viability of American and other foreign firms is put into question*".[42] The US government has also announced tariffs on Chinese imports, including at least a 100% tariff on imported Chinese electric vehicles.[43] The Canadian government may soon follow with its own tariffs on Chinese imports.[44]

The forecast for growth in India was also revised upward by the IMF in July 2024 to 7% in 2024 (compared to 6.8% in the April 2024 update), with the change reflecting carryover from upward revisions to growth in 2023 and improved prospects for private consumption, particularly in rural areas.[45]

2.2 Canadian outlook

Canada's annualized GDP growth picked up in Q1 2024 (2.5%) compared to annual growth of 1.2% in 2023.[46] However, it remains to be seen if the momentum can be maintained for the rest of the year. Canada's major banks do not expect growth to increase in 2024 (a forecast of 1% growth for 2024 based on the average of forecasts from TD, RBC and BMO). However, they expect a boost in growth due to BoC rate cuts in 2025 (average growth forecast of 1.8%). The inauguration of the Trans Mountain pipeline (which is expected to increase Canada's crude oil export capacity

[36] Ibid.

[37] The Overshoot. China's Unbalancing Is Going Into Overdrive. July 22nd, 2023.

[38] The Wall Street Journal. China's Housing Market Has Plenty of Space but Not Enough Buyers. April 4th, 2023.

[39] The Wall Street Journal. China's Shrinking Population Is Deeper Problem Than Slow Growth for Its Economy. January 17th, 2023.

[40] Financial Times. EU launches probe into Chinese wind turbine companies. April 9th, 2024.

[41] BBC. EU hits Chinese electric cars with new tariffs. July 4th, 2024.

[42] The Overshoot. Chinese "Overcapacity" Is Not the Problem. Underconsumption Is. April 22nd, 2024.

[43] CBC. Will Canada join the U.S. in a tariff battle against Chinese EV imports? June 21st, 2024.

[44] Ibid.

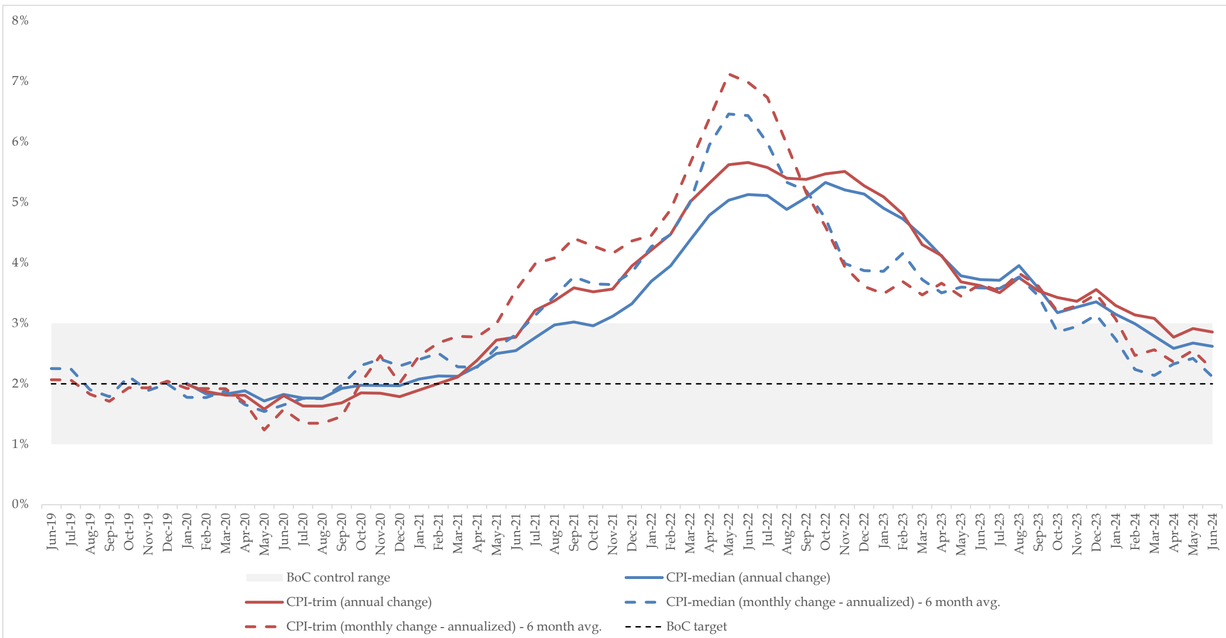
[45] International Monetary Fund. World Economic Outlook . July 16th, 2024.

[46] Statistics Canada. Gross domestic product (GDP) at basic prices, by industry, quarterly average (x 1,000,000). Accessed on July 18th, 2024.

significantly) and the development of additional liquefied natural gas ("LNG") export terminals expected to become operational between 2025 and 2030, may add to Canada's growth prospects over the short to medium time horizon.[47],[48]

Despite a meaningfully high inflation reading in May 2024 (annualized CPI-median and CPI-trim of 4.1%), inflation is steadily moving toward the BoC target of 2% (see Figure 8). It is worth noting that monthly inflation data can be noisy, and it is helpful to look at longer 3-12 month trends. However, the reduction of annual CPI from 3% to 2% is expected to be gradual, i.e., the BoC expects the CPI to reach its target by the end of 2025.[49]

Figure 8. Trajectory of inflation indicators preferred by the BoC



Notes:

CPI-trim is a measure of core inflation that excludes CPI components whose rates of change in a given month are located in the tails of the distribution of price changes. This measure helps filter out extreme price movements that might be caused by factors specific to certain components, specifically 20% of the weighted monthly price variations at both the bottom and top of the distribution of price changes.

CPI-median is a measure of core inflation corresponding to the price change located at the 50th percentile (in terms of the CPI basket weights) of the distribution of price changes in a given month. This measure helps filter out extreme price movements specific to certain components. This approach is similar to CPI-trim as it eliminates all the weighted monthly price variations at both the bottom and top of the distribution of price changes in any given month, except the price change for the component that is the midpoint of that distribution.

Source: St. Louis Fed, Statistics Canada.

LEI has also regularly tracked the price of natural gas prices in its previous reports. As noted

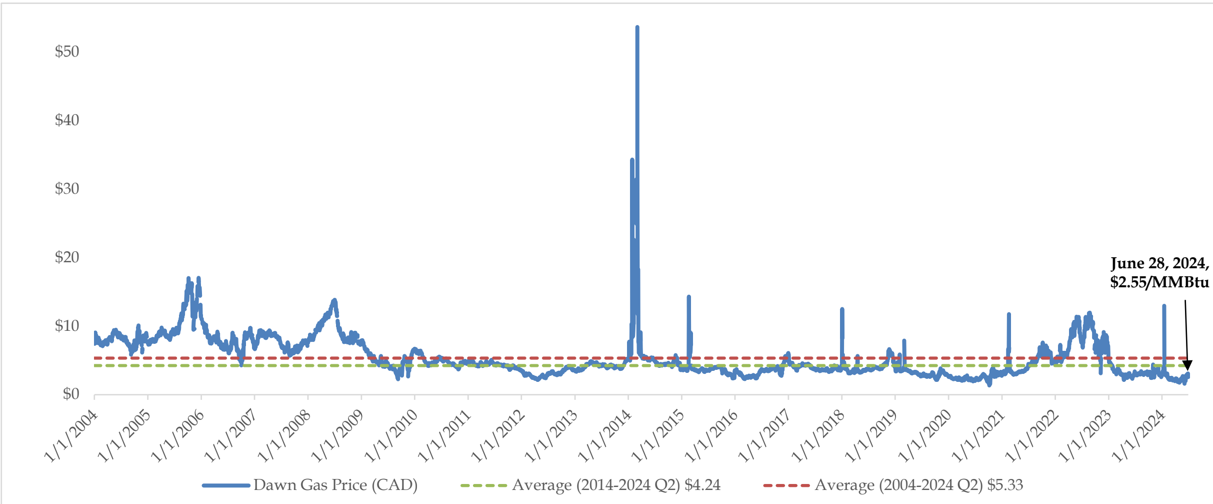
[47] Global News. Crude oil flowing into B.C. through Trans Mountain pipeline expansion. May 1st, 2024.

[48] Government of Canada. Canadian liquified natural gas projects. Accessed on July 24th, 2024.

[49] Bank of Canada. Monetary Policy Report – April 2024. April 10th, 2024.

earlier in the report, natural gas prices have been consistently lower than the 20-year average of \$5.3/MMBtu and the 10-year average of \$4.2/MMBtu. As of June 28th, 2024, the observed price was \$2.55/MMBtu (see Figure 9).[50]

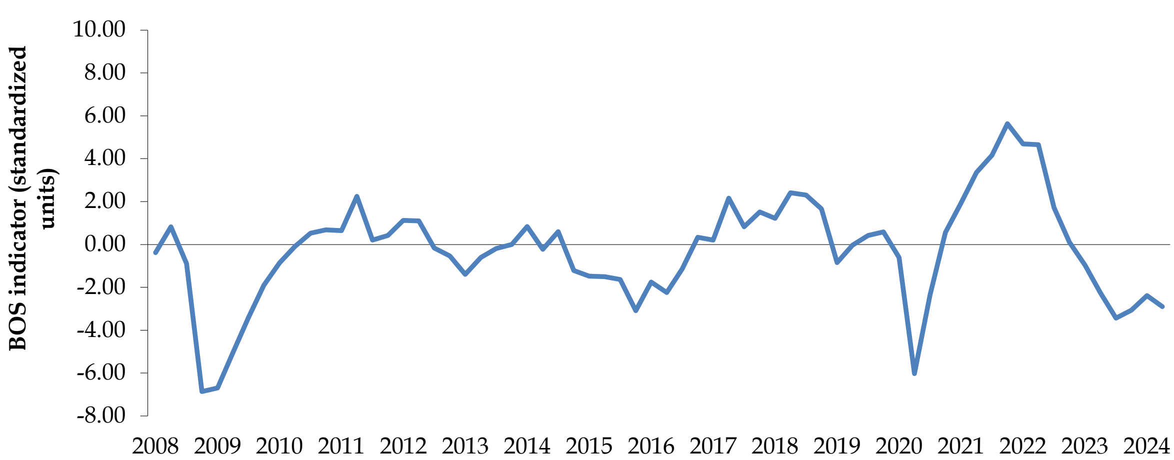
Figure 9. Natural gas price index at Dawn Hub (2004 – 2024 Q2)



Source: S&P Global Capital IQ. Accessed on July 16th, 2024.

The Bank of Canada's most recent Q2 2024 Business Outlook Survey, business sentiment remained relatively flat in Q2 2024 after recovering from the lows seen in late 2023 (see Figure 10). When discussing factors weighing on business sentiment, firms mentioned elevated interest rates, weak demand, particularly for non-essential goods and services, and ongoing high costs. At the same time, though, the share of firms planning for a recession in Canada in the coming 12 months continued to decline.

Figure 10. Business confidence, 2008 Q1 – 2024 Q2



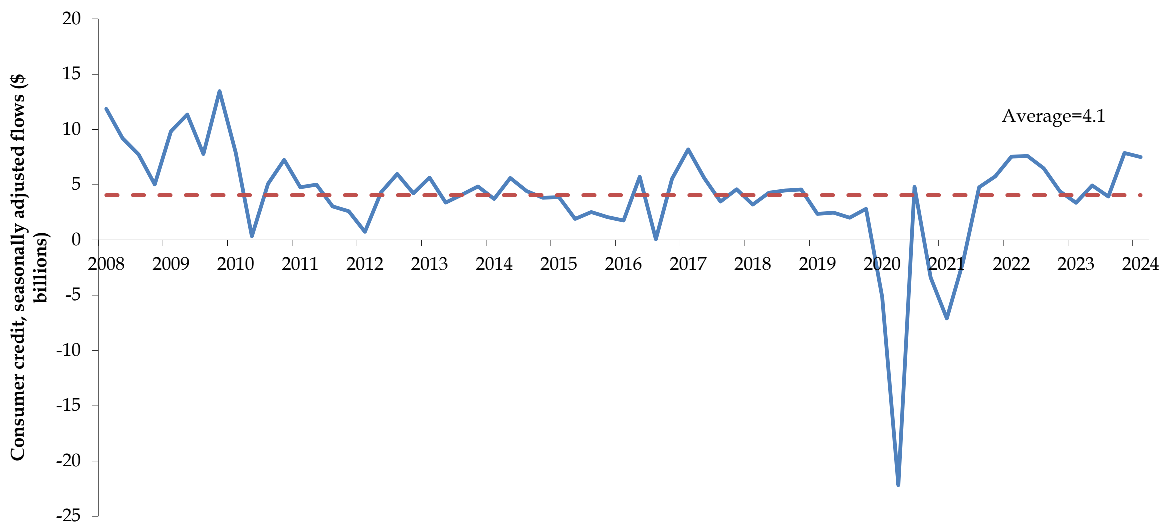
[50] S&P Global Capital IQ.

Note: The BOS indicator is above zero when business confidence is above its historical average.

Source: Bank of Canada. *Business Outlook Survey – Second Quarter of 2024*. July 15th, 2024.

LEI also tracks the movements of consumer credit levels every quarter (as reported by Statistics Canada). The consumer credit levels have increased in 2024 relative to the long-term average (see Figure 11).

Figure 11. Consumer credit, 2008-Q1 to date



Note: The latest consumer credit data was most recently published in June 2024 for Q1 2024.
Source: Statistics Canada. *CANSIM Table 38-10-0238-01*. Accessed on July 16th, 2024.

2.3 Ontario outlook

Ontario's forecasted economic growth rate of 1.5% outpaced Canada's economic growth rate of 1.2% in 2023, largely due to increased household spending. The forecasted growth of 0.9% in 2024 and 1.9% in 2025 is now expected to be in line with the forecasted growth for Canada as a whole (about 1.0% and 1.8% for 2024 and 2025, respectively).[51]

Businesses and consumers are still grappling with high borrowing costs, keeping residential investment soft.[52] High interest rates have affected Ontario more than other Canadian provinces. For instance, Ontario saw the largest jump in unemployment rate between January 2024 and May 2024 among any Canadian province.[53] The unemployment rate in Ontario reached 7% in June 2024, the highest since January 2022.[54]

[51] Economic growth forecasts are considered as an average of 3 forecasts: TD Economics, BMO Economics, and RBC Economics.

[52] RBC. Macroeconomic Outlook. June 12th, 2024.

[53] Ibid.

[54] Statistics Canada. Table: 14-10-0287-01. Accessed on July 18th, 2024.

The outlook for Ontario brightens in 2025, given the prospect of continued policy easing by the BoC that should gradually remove the weight of high debt service costs from consumers.[55] One area that should be a positive for near-term household spending growth is the housing market, with a healthy gain expected in Ontario's home sales in the back half of 2024 amid falling interest rates.[56]

[55] TD Economics. Provincial Economic Forecast. June 19th, 2024.

[56] Ibid.

3 Cost of capital parameters – Q1 2024 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. As part of this quarterly review, LEI has conducted an internal update of the cost of capital parameters using data as of June 30th, 2024.[57]

3.1 Return on equity

The ROE is the allowed return on shareholders' invested capital that is comparable to the return that investors would expect to earn from other investments with similar levels of business risk. Using data as of June 30th, 2024, from the Bank of Canada, Consensus Economics, and Bloomberg, LEI calculated the updated ROE as 9.23%; this is slightly higher than the ROE approved in the OEB's 2023 cost of capital parameter review (9.21%) for rates effective in 2024. See Appendix A for the detailed calculation. The increase is driven by a slight increase in DLTDR (0.05%) compared to September 2023.

3.2 Deemed long-term debt rate

The DLTDR reflects the interest rate that would be charged to an A-rated commercial business customer for a long-term (30-year) commercial loan. Utilizing data as of June 30th, 2024 the deemed long-term debt rate is determined to be 4.63%, which is slightly higher than the 4.58% determined using data as of September 30th, 2023. The increase is primarily driven by higher LCBF over the upcoming 12-month period.[58,59] However, the change in LCBF is relatively minor (0.06%). LCBF will likely continue hovering around the expected nominal neutral interest rate range of 2.25%-3.25%, i.e., the rate to which the policy rate is expected to converge in the long run.[60] See Appendix A for the detailed calculation of DLTDR.

[57] On March 6th, 2024, the OEB issued a Notice of Hearing on its own motion to initiate the Generic Proceeding (EB-2024-0063) to review the methodology for determining the values of the cost of capital parameters and deemed capital structure to be used to set rates for electricity transmitters, electricity distributors, natural gas utilities, and rate-regulated electricity generators. LEI submitted its expert report addressing the issues identified in the proceeding on June 21st, 2024.

[58] The forecast yield for LCBF is calculated by taking the average of the 3-month and 12-month 10-year Government of Canada bond yield forecasts, as stated in the relevant issue of Consensus Forecasts, and adding the average of the actual observed spreads between 10-year and 30-year Government of Canada bond yields, for each business day in the month corresponding to the most recent Consensus Forecast issue. A-rated Utility Bond Yield Spread (utility series C29530Y published by Bloomberg) is then added to LCBF to determine DLTDR.

[59] Bloomberg has ceased updating the utility series (C29530Y) as of February 2024. In consultation with the OEB staff, LEI has therefore used Bloomberg's alternative BVCAUA30 BVLI Index. LEI compared the two indices over the May 2023-January 2024 period and found no meaningful difference between the two indices. As such, the switch to the BVCAUA30 BVLI Index does not impact the calculation of DLTDR and ROE.

[60] Bank of Canada. Monetary Policy Report – July 2024. July 24th, 2024.

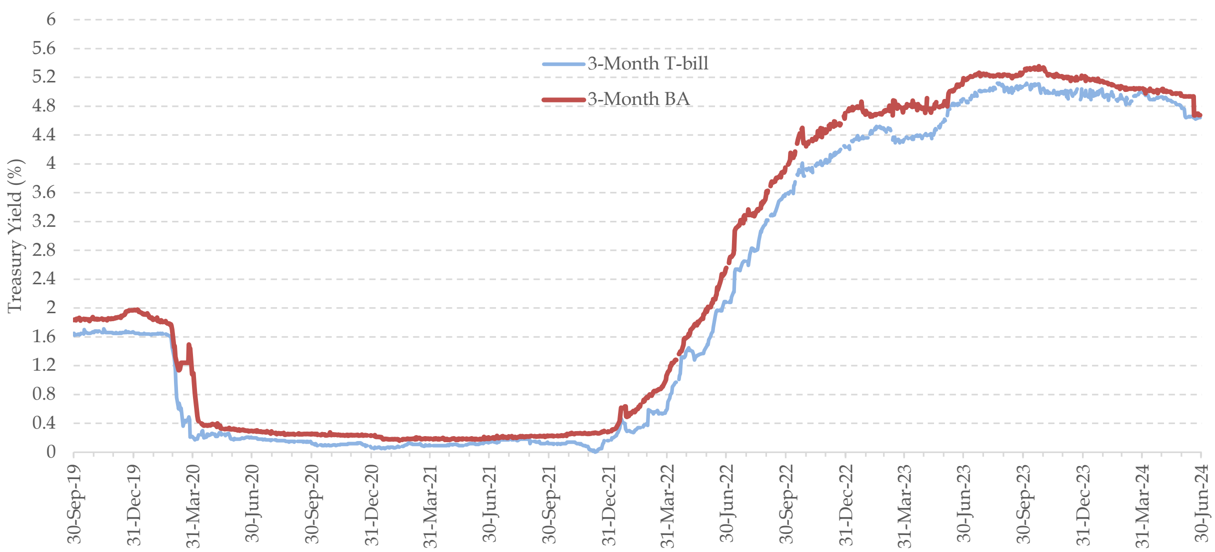
3.3 Deemed short-term debt rate

The DSTDR reflects the interest rate a commercial bank would charge to an A-rated commercial business customer for a short-term (e.g., 3-month) loan.[61] We note that the DSTDR calculation incorporates the results of a confidential survey of major Canadian banks conducted by OEB staff, whereby estimates for the spread of short-term commercial debt issuances over BA rates are provided. The most recent survey responses were gathered by OEB staff during September and October 2023.

The DSTDR estimated using data as of June 30th, 2024, is 5.83% (a decline of 0.39% since September 2023). BA rates are highly correlated with changes in policy interest rates set by the BoC. DSTDR is primarily influenced by changes in 3-month BA rates. The 3-month BA rate is expected to drop further in 2024 as the BoC implements rate cuts.

As observed in Figure 12, changes in DSTDR have been consistent with changes in short-term rates (3-month T-bill rates). However, on average, the 3-month BA rates have been higher than 3-month T-bill rates since October 2019 by 23 basis points.

Figure 12. 3-month Canadian Treasury bill rates vs. 3-month BA rates (October 2019 – June 2024)



Sources: Bank of Canada; Investment Industry Regulatory Organization of Canada.

[61] The EB-2009-0084, Report of the Board, on the Cost of Capital for Ontario's Regulated Utilities, December 11th, 2009, refers to "short-term" loans. However, the OEB staff Report issued on January 14th, 2016, refers to "3-month loans". As mentioned in LEI's previous quarterly update, while the Board report is policy, LEI believes it would be appropriate to define 'short-term' in this context.

4 Appendix A: Cost of capital parameter calculations

Figure 13. ROE and LTDR calculation

Cost of Capital Parameter Calculations (For rate changes effective in 2025)

Step 1: Analysis of Business Day Information in the Month

Month: **June 2024**

	Day	Bond Yields % Govt. of Canada 10-yr	Bond Yields % Govt. of Canada 30-yr	Bond Yields % A-rated Utility 30-yr	Bond Yield Spreads % 30-yr. Govt. over 10-yr Govt.	Bond Yield Spreads % 30-yr. Util. over 30-yr Govt.
1	1-Jun-24					
2	2-Jun-24					
3	3-Jun-24	3.52	3.35	4.77	-0.17	1.42
4	4-Jun-24	3.44	3.31	4.72	-0.13	1.41
5	5-Jun-24	3.38	3.28	4.68	-0.10	1.40
6	6-Jun-24	3.39	3.31	4.71	-0.08	1.40
7	7-Jun-24	3.46	3.38	4.79	-0.08	1.41
8	8-Jun-24					
9	9-Jun-24					
10	10-Jun-24	3.50	3.42	4.83	-0.08	1.41
11	11-Jun-24	3.47	3.40	4.81	-0.07	1.41
12	12-Jun-24	3.39	3.34	4.75	-0.05	1.41
13	13-Jun-24	3.32	3.26	4.68	-0.06	1.42
14	14-Jun-24	3.28	3.21	4.63	-0.07	1.42
15	15-Jun-24					
16	16-Jun-24					
17	17-Jun-24	3.31	3.23	4.66	-0.08	1.43
18	18-Jun-24	3.26	3.19	4.62	-0.07	1.43
19	19-Jun-24	3.29	3.21	4.64	-0.08	1.43
20	20-Jun-24	3.33	3.25	4.68	-0.08	1.43
21	21-Jun-24	3.34	3.26	4.69	-0.08	1.43
22	22-Jun-24					
23	23-Jun-24					
24	24-Jun-24	3.34	3.26	4.68	-0.08	1.42
25	25-Jun-24	3.37	3.26	4.68	-0.11	1.42
26	26-Jun-24	3.47	3.35	4.78	-0.12	1.43
27	27-Jun-24	3.47	3.36	4.79	-0.11	1.43
28	28-Jun-24	3.50	3.39	4.82	-0.11	1.43
29	29-Jun-24					
30	30-Jun-24					
		3.392	**3.301**	**4.720**	**-0.091**	**1.419**
	Sources:	Bank of Canada		Bloomberg		

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

Source: Consensus Forecasts   Survey Date: June 10, 2024

	3-month	12-month	Average	
Jun-24	3.400	3.200	**3.300**	%

Step 3: Long Canada Bond Forecast

10-yr Govt. of Canada Bond Forecast (from Step 2)	3.300	%
Actual Spread of 30-year over 10-year Government of Canada Bond Yield (from Step 1)	-0.091	%
Long Canada Bond Forecast (LCBF)	**3.210**	%

Step 4: Return on Equity (ROE) Forecast

Initial ROE			9.75	%
Change in Long Canada Bond Yield Forecast from September 2009				
LCBF (June 2024) (from Step 3)	3.210	%		
Base LCBF	4.250	%		
Difference	-1.041	%		
0.5 x Difference			-0.520	%
Change in A-rated Utility Bond Yield Spread from September 2009				
A-rated Utility Bond Yield Spread (June 2024) (from Step 1)	1.419	%		
Base A-rates Utility Bond Spread	1.415	%		
Difference	0.004	%		
0.5 x Difference			0.002	%
Return on Equity based on June 2024 data			**9.232**	%

Step 5: Deemed Long Term Debt Rate Forecast

Long Canada Bond Forecast for June 2024 (from Step 3)	3.210	%
A-rated Utility Bond Yield Spread June 2024 (from Step 1)	1.419	%
Deemed Long-term Debt Rate based on June 2024 data	**4.628**	%

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

Figure 14. STDR calculation

Cost of Capital Parameter Calculations (For rate changes effective in 2025)

Step 1: Average annual spread over Banker's Acceptance

A.		Average Spread over 90-day Bankers Acceptance		Survey Date
	Bank 1	80.0	bps	Sep/Oct 2023
	Bank 2	100.0	bps	Sep/Oct 2023
	Bank 3	100.0	bps	Sep/Oct 2023
	Bank 4	112.5	bps	Sep/Oct 2023
	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	112.5	bps
Low estimate	80	bps

C.

Average annual spread	100	bps

Step 3: Deemed Short-Term Debt Rate Calculation

Average annual spread	1.00%
Average Banker's Acceptance Rate	4.833%
Deemed Short Term Debt Rate	**5.833%**

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

Month: June 2024

	Day	Bankers' Acceptance Rate (%) 3-month
1	1-Jun-24	
2	2-Jun-24	
3	3-Jun-24	4.93%
4	4-Jun-24	4.93%
5	5-Jun-24	4.93%
6	6-Jun-24	4.93%
7	7-Jun-24	4.93%
8	8-Jun-24	
9	9-Jun-24	
10	10-Jun-24	4.93%
11	11-Jun-24	4.93%
12	12-Jun-24	4.93%
13	13-Jun-24	4.93%
14	14-Jun-24	4.93%
15	15-Jun-24	
16	16-Jun-24	
17	17-Jun-24	4.93%
18	18-Jun-24	4.93%
19	19-Jun-24	4.67%
20	20-Jun-24	4.67%
21	21-Jun-24	4.70%
22	22-Jun-24	
23	23-Jun-24	
24	24-Jun-24	4.70%
25	25-Jun-24	4.70%
26	26-Jun-24	4.67%
27	27-Jun-24	4.67%
28	28-Jun-24	4.67%
29	29-Jun-24	
30	30-Jun-24	
		4.833%

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

5 Appendix B: OEB cost of capital methodology

The OEB's current cost of capital policy stems from a 2009 review, with case reference EB-2009-0084, through which a modified capital asset pricing model ("CAPM") methodology and an equity risk premium ("ERP") approach were adopted. The formulaic approach for determining the cost of capital parameters (the ROE, DLTDR, and DSTDR) was chosen given that there are over seventy regulated entities under the OEB's jurisdiction – where a cost of capital review for each entity would prove to be too expensive and administratively burdensome.[62] However, while the parameters are set formulaically, the results are reviewed and approved by the OEB annually, and are compared against short-term forecasts of macroeconomic conditions to ensure the derived values are reasonable.

Under the cost of capital policy, the OEB applies the formulae to derive values for the ROE, DLTDR, and DSTDR on an annual basis, and originally envisioned conducting a review every five years to ensure *"the formula-generated ROE continues to meet the Fair Return Standard, as well as objectives of maintaining regulatory efficiency and transparency."*[63] Ensuring the parameters meet the Fair Return Standard ("FRS") is a legal requirement of the OEB, where the FRS includes the concepts of comparability, financial soundness and adequacy.

Since the 2009 review, OEB staff has conducted only one further review to ensure the continued reasonableness of its methodology.[64] This review commenced in 2014, with the final OEB staff report in January 2016 concluding that the 2009 cost of capital methodology *"worked as intended"* and did not recommend any changes to the approach.[65]

The formula used by the OEB to calculate ROE, DLTDR and DSTDR is depicted the figures below.

Figure 15. ROE formula

$$ROE_t = \text{Base ROE } (9.75\%) + 0.5 \times (LCBF_t - \text{Base LCBF}) + 0.5 \times (UtilBondSpread_t - BaseUtilBondSpread)$$

where:

- ROE_t = Return on Equity
- $LCBF_t$ = Long Canada Bond Forecast
- Base LCBF = 4.25%
- $UtilBondSpread_t$ = the average spread of 30-year A-rated Canadian Utility bond yields over 30-year Government of Canada bond yields over all business days in the month that is three months in advance of the implementation date for rates
- BaseUtilBondSpread = 1.415%

[62] OEB. *EB-2009-0084: Report of the Board on the Cost of Capital for Ontario's Regulated Utilities.* December 11, 2009.

[63] Ibid. p. iii.

[64] This was also highlighted in earlier LEI quarterly reports (such as in Section 2.2 of the Q3 2019 report).

[65] OEB. *Staff Report EB-2009-0084: Review of the Cost of Capital for Ontario's Regulated Utilities.* January 14, 2016. p. 4.

Figure 16. DLTDR formula

$$DLTDR_t = LCBF_t + \frac{\sum_i \left({}_{30}UtilBonds_{i,t} - {}_{30}CB_{i,t}\right)}{I}$$

where:

- $DLTDR_t$ = Deemed Long-Term Debt Rate
- $LCBF_t$ = Long Canada Bond Forecast
- ${}_{30}UtilBonds_{i,t}$ = the average 30-year A-Rated Canadian Utility bond yield rate, from Bloomberg L.P., for business day i of the month that is three months in advance of the implementation date for rates
- ${}_{30}CB_{i,t}$ = the benchmark bond yield rate for the 30-year Government of Canada bond at the close of day i of the month that is three months in advance of the implementation date for rates
- I = number of business days for which Government of Canada and A-rated Utility bond yield rates are published in the month that is three months in advance of the implemented date for rates

Figure 17. DSTDR formula

$$DSTDR_t = AnnSpread_t + \frac{\sum_i BA_i}{I}$$

where:

- $DSTDR_t$ = Deemed Short-Term Debt Rate
- $AnnSpread_t$ = the average annual spread in short-term debt issuances for an R1-low utility over 3-month Banker's Acceptance rates for the test year t, calculated using a confidential survey
- BA_i = the 3-month Bankers' Acceptance Rate for day i in the selected month, as published by Statistics Canada and the Bank of Canada
- I = number of business days for which Government of Canada and A-rated Utility bond yield rates are published in the month that is three months in advance of the implemented date for rates

Source: OEB. *Staff Report EB-2009-0084: Review of the Cost of Capital for Ontario's Regulated Utilities.* January 14, 2016.

The OEB in its 2016 review concluded that the cost of capital parameters have tracked macroeconomic conditions reasonably well while also minimizing excess volatility.[66] LEI generally agrees that the current methodology has responded reasonably well to changes in macroeconomic conditions since 2009 while minimizing volatility (the allowed ROE has stayed in the range of 8.34% to 9.85%). The values of DLTDR and DSTDR (as of June 2024) also appear to be representative of current market expectations.

However, the current DSTDR methodology (3-month BA rate plus a spread) is no longer appropriate as major Canadian banks will transition all existing financial products referencing CDOR/BAs to referencing CORRA on or before June 28th, 2024. In its expert report for the OEB Generic Proceeding, LEI has recommended the average of 3-month CORRA futures rates be considered for the next 12-month period, with the spread for an R1-low rated utility over CORRA

[66] OEB. *Staff Report EB-2009-0084: Review of the Cost of Capital for Ontario's Regulated Utilities.* January 14, 2016.

determined from an annual confidential survey of banks. For DLTDR, LEI believes that the current methodology is broadly appropriate but can be improved upon by considering reputable publicly available sources for 30-year bond yield forecasts for LCBF (instead of 10-year bond yield forecasts from Consensus Forecasts and actual 30-year bond yield over 10-year bond yield spreads).

For ROE, LEI has recommended that the OEB consider recalculating the base ROE using the Capital Asset Pricing Model ("CAPM"), with updated calculations for LCBF and utility bond spreads adjustment factors.

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