Ontario Energy Association (OEA)

Answer to Interrogatory from
Association of Major Power Consumers in Ontario (AMPCO) / Industrial Gas Users Association (IGUA)

INTERROGATORY

Reference:

On page 41, Concentric makes reference to the data used to construct Figure 2 on page 42, which compares the deemed vs actual long-term debt cost rate over the January 2010-January 2024 period, and states (bold added for emphasis):

> *Since 2010, the OEB's deemed long-term debt cost rate has had periods of being above and below the Bloomberg index,and* ***averaged 40 bps higher than the index.***

Question(s):

a) Please provide all data and workpapers (in excel format), including all formulas and calculations, used to prepare Figure 2, and to determine the 0.40% average referenced in the cited reference.

b) Please confirm that the observations used to determine the "OEB Deemed Long-Term Debt Rate" depicted in Figure 2, are determined using September forecasts for 10-year Government of Canada bond yields, which are then adjusted to provide estimates of 30-year Government of Canada yields. If not confirmed, please explain.

c) Please confirm that the cited reference confirms that the deemed long-term rates (based on forecast yields) averaged +0.40% higher than the actual yields that resulted. If not confirmed, please explain.

d) Please confirm that the +0.40% upward bias (discussed in question (c)) documented by Concentric is identical to the +0.40% upward bias that is determined by Dr. Cleary in Appendix A of his evidence, with respect to OEB 30-year Government of Canada yield forecasts, versus actual yields that prevailed over the 2011-2023 period. If not confirmed, please explain.

Response:

a) Please see IGUA-AMPCO-1a, Attachment 1.

b) The "OEB Deemed Long-Term Debt Rate" is provided annually by the OEB in its Cost of Capital Parameter Calculations. It is the 10-year Government of Canada Consensus Forecast, plus the actual spread of the 30-year over 10-year Government of Canada bond yields, plus the actual A-rated utility bond yield spread over 30-year Government of Canada bond yields.

c) Concentric confirms that the cited reference indicates that the actual long-term debt cost rates have exceeded the OEB's deemed long-term debt cost rate by an average of 40 basis points since 2010.

d) Concentric confirms that, as stated in the Concentric report, the average difference between the OEB's deemed long-term debt cost rate and the Bloomberg index has been 40 basis points since 2010, and that that figure is approximately the same as the "about 0.4%" difference found by Dr. Cleary when he compared average actual 30-year government yields from 2011-2023 to average September (November) Consensus forecasts.

This page is intentionally left blank. Due to size, this Attachment has not been included.

Please see Exhibit N-M2-7-AMPCO/IGUA-1a_Attachment 1.xlsx on the OEB's RDS.

Ontario Energy Association (OEA)

Answer to Interrogatory from
Association of Major Power Consumers in Ontario (AMPCO) / Industrial Gas Users Association (IGUA)

INTERROGATORY

Reference:

On page 11 of its evidence, Concentric states (bold added for emphasis):

> *An 8.95 percent authorized ROE would be in the bottom decile of* ***authorized ROEs among Canadian and U.S. utilities*** *and would not satisfy the Fair Return Standard.*

On page 12, Concentric states (bold added for emphasis):

> *With regard to equity thickness, Concentric's* ***primary finding*** *within the context of this generic cost of capital proceeding is that Ontario equity ratios across all industry segments are l****ower than North American industry peers and fail to meet the comparable return standard component of the Fair Return Standard.***

Alberta Utilities Commission Decision 22570-D01- 2018, para. 474:

> *As previously discussed in Section 4, the Commission will not take any guidance from the evidence presented about approved utility ROEs in other Canadian and U.S. jurisdictions. The objective of the GCOC is to consider the market expectation for the affected utilities and not what other regulators are allowing.*

Alberta Utilities Commission Decision 20622- D01-2016, para. 303:

> *The Commission finds that the material presented by Dr. Villadsen in Figure 21 of her evidence simply lists the allowed ROEs and common equity ratios for a sample of U.S. and Canadian utilities. This information does not permit the Commission to address the deficiencies identified in the 2009 GCOC Decision such as applicable legislations and case law, and individual factors specific to the utility, like the business risk of the utility. (footnote omitted)*

Preamble:

Concentric's ROE and equity ratio (ER) recommendations appear to rely heavily on the argument that since allowed ROEs and ERs in the U.S. are higher than those for Ontario utilities, the Ontario utility allowed ROE and ERs need to be increased. There are at least 25 such references in Concentric's report to Ontario allowed ROEs and/or ERs being below those allowed in the U.S., as well as 14 that reference comparisons to both North American and Canadian ratios.

Question(s):

a) Does Concentric agree that as or more important than considering allowed ROEs and ERs in other jurisdictions in determining the appropriate ROE and ER for Ontario's utilities is an examination of Ontario utilities' business risk, and examination of market-based evidence regarding factors that should impact earned ROEs, such as expected future stock market returns, government bond yields, yields on Ontario utility bonds, etc.?

b) Is it Concentric's view that the Alberta Utilities Commission (AUC) is wrong in its findings noted as reference for this question? If yes, please explain the basis for such a view.

Response:

a) Concentric is of the view that determining the appropriate ROE and equity ratio for Ontario's utilities requires the consideration of multiple factors and analytical models, including business risk information, macroeconomic and proxy company market data, and multiple approaches to estimate the cost of common equity, including the DCF model, the CAPM, and the Risk Premium model. Concentric has considered these factors along with authorized ROEs and equity ratios of peer companies. In Concentric's experience, authorized ROEs and equity ratios are important benchmarks representing investors' return expectations for other North American utilities.

b) From Concentric's perspective, allowed ROEs and equity ratios in other North American jurisdictions are important data points both in terms of comparability of the allowed return, and in understanding how investors and credit rating agencies view the overall regulatory environment. A tenet of the Fair Return Standard, however, is that the means of arriving at a fair return are not of paramount importance, only that the end result leads to just and reasonable rates. In the AUC's case, the AUC declined to put weight on the authorized ROEs and equity ratios of peer utilities in reaching its conclusions regarding a fair return. Concentric believes that such an approach, while not wrong per se, increases the risk that the end result will not

comport with the comparability principle of the Fair Return Standard, because it won’t consider those important data points that investors rely on in making investment decisions.

Ontario Energy Association (OEA)

Answer to Interrogatory from
Association of Major Power Consumers in Ontario (AMPCO) / Industrial Gas Users Association (IGUA)

INTERROGATORY

Reference:

On page 44, Concentric discusses macroeconomic data in May 2024, which it compares to the same November 2009 figures. In its discussion, Concentric states (bold added for emphasis):

> *As shown in the above Figure,* ***while interest rates on 30-year Canadian government and utility bonds have declined since November 200****9, most other market indicators have increased.*

Exhibit M4, Figure 1:

> Dr. Cleary's evidence reports real GDP growth for Canada in 2008 and 2009 of 1.00% and -2.95% respectively, versus the 1992-2022 average of 2.32%, which is consistent with current real GDP growth expectations for Canada in 2025 of 2.2% according to the Bank of Canada's April 2024 Monetary Policy Report (MPR).
> With respect to CPI, Dr. Cleary's evidence reports CPI for Canada in 2008 and 2009 of 1.34% and 1.30% respectively, versus the 1992-2022 average of 2.00% (the Bank's target rate), which is consistent with CPI expectations for Canada in 2025 of 2.2% according to the Bank's April 2024 MPR.

Exhibit M4, Figure 3:

> Dr. Cleary's evidence reports stock market returns on the TSX/S&P Index were -32.95% and +35.04% in 2008 and 2009 respectively, versus the 1998-2023 average of 8.4%; while in the U.S. the S&P 500 returns for 2008 and 2009 were -36.92% and +26.45% respectively, versus the 1998-2023 average of 9.93%.

Question(s):

a) Would Concentric agree that capital market conditions in Canada and the U.S. in November 2009 were atypical as a result of the financial crisis of 2008 and early 2009? If not, please explain please explain why Concentric believes November 2009

is a typical and representative point in time for economic and capital market conditions in Canada and the U.S.

b) Can Concentric confirm that;
   i. Long-term Government of Canada yields and Canadian A-rated utility yields are included in the OEB's ROE formula and bear a very direct relationship to Ontario utilities' cost of equity (KE)?
   ii. Long-term Canada yields have declined 0.43% since 2009?
   iii. A-rated utility yields have declined 0.55%?
   iv. The yield spread between the two yields has declined from 1.46% in 2009 to 1.35% (slightly above the long-term average of 1.3%) today?
   v. Long-term Canada yields are used as a proxy for the risk-free rate (RF) in CAPM cost of equity estimates (including those provided by Concentric)?
   vi. Utility yields comprise approximately 60% of the weighted average cost of capital for Ontario utilities (assuming a 40% equity ratio), and are closely linked to their cost of equity (KE), and that this relationship is clearly defined in the widely used bond yield plus risk premium approach to estimating Ke?

c) Would Concentric agree that the changes listed in part (b) of this question are very positive capital market condition changes relative to conditions in 2009, and positively affect Ontario utilities? If not please explain why not.

Response:

a) Concentric agrees that capital market conditions in 2008 and early 2009 were disrupted by the financial crisis. However, that is the context in which the Ontario Energy Board was considering modifications to the then-existing formula, which was entirely dependent on changes in government bond yields. In December 2009, the OEB Report in EB-2009-0084 found that the formula was not producing a fair return. Consequently, the Board made certain adjustments to the formula, including the addition of changes in the utility credit spread, as well as updating the formula parameters for then--current market conditions. Figure 3 in Concentric's report (Exhibit M2) provides a comparison of key market indicators in November 2009 (immediately prior to the OEB's decisions in the last GCOC proceeding) and May 2024 (the period used for Concentric's analysis in this proceeding).

b) Confirmed with regard to subparts (i) through (v). On (vi), utility yields are just one of several factors affecting the cost of capital for utilities, and as examined in Concentric's evidence, this relationship has weakened over time (see Concentric Report, pp. 95-98). Further, in Concentric's experience, the "widely used bond yield plus risk premium approach to estimating Ke" as suggested in the question is just one of several models used by analysts and regulators, so we would not attach the same degree of importance suggested in the question.

c) Although the Canadian government bond yields and Canadian A-rated utility bond yields have decreased since November 2009, and that market data is reflected in our ROE analysis, other factors beyond these need to be considered in determining if the changes in the capital market is positive. As discussed on page 44 of Concentric's report, other market indicators have increased in May 2024 as compared to November 2009, suggesting that capital costs are higher today. Importantly, utility betas (both raw and adjusted) are substantially higher, which provides direct market evidence that investors perceive utilities to have much greater risk relative to the broad market today than was the case in 2009. In addition, consumer price inflation is much higher in May 2024 in both Canada and the U.S. than it was in November 2009, and central bank policy is much more restrictive in response to higher inflation, as compared to November 2009 when accommodative monetary policy was attempting to stimulate the global economy following the Great Recession and financial crisis. Furthermore, yields on U.S. Treasury bonds and A-rated utility bonds were higher in May 2024 than in November 2009.

Ontario Energy Association (OEA)

Answer to Interrogatory from
Association of Major Power Consumers in Ontario (AMPCO) / Industrial Gas Users Association (IGUA)

INTERROGATORY

Reference:

On page 46, Concentric provides its Canadian proxy group in Figure 4 as copied below:

**Figure 4: Canadian Proxy Group**

| Company | Ticker |
|---|---|
| AltaGas Limited | ALA |
| Canadian Utilities Limited | CU |
| Emera, Inc. | EMA |
| Enbridge, Inc. | ENB |
| Fortis, Inc. | FTS |
| Hydro One Ltd. | H |

2024 Alberta Utilities Commission Proceeding 27084, Determination of the Cost-of Capital Parameters in 2024 and Beyond, November 10, 2022 (GCOC), memo to all parties, Appendix A – Finalized screening criteria," (27084-X0256 2022-11-10 Appendix A - Finalized screening criteria):

> *The following publicly traded Canadian utility holding companies are included in the comparator group, regardless of the screening criteria:*
> - *Algonquin Power & Utilities Corp.*
> - *Canadian Utilities Ltd.*
> - *Emera Inc.*
> - *Fortis Inc.*
> - *Hydro One Ltd.*

2024 Alberta Utilities Commission Proceeding 27084, Determination of the Cost-of Capital Parameters in 2024 and Beyond, Generic cost of capital issues list and other matters" (27084-X0255 2022-11-10 AUC letter - GCOC issues list and other matters), page 4 (bold added for emphasis):

> *15. While consensus was successfully reached on the majority of items discussed at the technical conference, certain matters remained outstanding and required further submissions from all parties, which the Commission received on November 2, 2022. The Commission has*

*reviewed these submissions and provides a ruling on each unresolved item below:*
*(a) Inclusion of TC Energy Corporation and Enbridge Inc. – The Commission has determined that* ***the comparator group will not include TC Energy Corporation and Enbridge Inc****. Integration of these companies would be inconsistent with the Commission's prior approach for determining ROE.*[16] ***Furthermore, the associated business risk, form of regulation and comparability of the two companies is not representative of that for regulated transmission and distribution utilities*** *under the Commission's jurisdiction. The majority of parties took a similar position in their November 2, 2022, submissions*.

*16 Decision 22570-D01-2018: 2018 Generic Cost of Capital, Proceeding 22570, August 2, 2018, paragraph 273.*

Question(s):

a) Please confirm that the five Canadian utilities included in the AUC's Canadian proxy group listed above were determined to be reasonable comparable Canadian utilities during the 2024 Alberta Generic Cost of Capital Proceedings.

b) Please confirm that during the 2024 Alberta GCOC Proceedings Mr. Coyne of Concentric opposed the inclusion of AltaGas Limited (a BBB- rated utility) as a reasonable Canadian utility comparator.

c) Please confirm that at the time of the Alberta GCOC proceeding, relative to the AUC's approved proxy group as noted in the above references, AltaGas Limited had:

   i) the highest growth estimate of 8.98% versus group average of 5.27% (which includes AltaGas' high growth rate);

   ii) the second highest DCF Constant-Growth Ke estimate used by Concentric for its Canadian proxy group of 13.22% versus group average of 10.56% (which includes AltaGas' high Ke estimate);

   iii) the highest beta estimate used by Concentric for its Canadian proxy group of 1.16 versus group average of 0.84 (which includes AltaGas' high beta estimate); and

   iv) the highest CAPM (Historical MRP) Ke estimate used by Concentric for its Canadian proxy group of 11.39% versus group average of 9.36% (which includes AltaGas' high Ke estimate).

d) Please explain why AltaGas is now included by Concentric in its Canadian Proxy Group for the purposes of its evidence in this proceeding.

e) Please confirm that at the time of the 2024 Alberta GCOC proceeding, relative to the AUC's approved proxy group as noted in the above references, Enbridge Inc. had:

   i) the highest expected dividend yield of 7.77% versus group average of 5.28% (which includes Enbridge's extremely high dividend yield);

   ii) the second highest DCF Constant-Growth Ke estimate used by Concentric for its Canadian proxy group of 12.56% versus group average of 10.56% (which includes Enbridge's high Ke estimate);

   iii) the second highest Beta estimate used by Concentric for its Canadian proxy group of 0.89 versus group average of 0.84 (which includes Enbridge's' high beta estimate); and

   iv) the second highest CAPM (Historical MRP) Ke estimate used by Concentric for its Canadian proxy group of 9.69% versus group average of 9.36% (which includes Enbridge's high Ke estimate).

f) Please confirm that if Concentric excluded AltaGas Limited and Enbridge Inc. from its Canadian proxy group in this proceeding, that:

   i) The average constant-growth DCF Ke estimate would decline 1.17% from 10.56% to 9.39%.

   ii) The average CAPM (historical MRP) Ke estimate would decline 0.58% from 9.36% to 8.78%.

   If not confirmed, please explain.

Response:

a) Confirmed.

b) Concentric adopted the North American proxy group as determined by the Alberta Utilities Commission and provided to the parties in Appendix B to its November 10, 2022 letter describing the final issues list in Proceeding 27084. The AUC's proxy group did not include AltaGas Ltd.

c) Concentric is not able to confirm this information for AltaGas Ltd. because, as stated in the response to part (b) above, AltaGas Ltd. was not included in Concentric's ROE analysis in the referenced Alberta GCOC proceeding.

d) AltaGas Ltd. was included in Concentric's Canadian proxy group, North American

Gas proxy group, and North American combined proxy group in this proceeding because the company meets the criteria for inclusion in the Canadian proxy group as described on page 45 of Concentric's report, Exhibit M2. Specifically, AltaGas Ltd. has an investment grade credit rating of BBB-. The AUC's North American proxy group only included those companies with a credit rating of BBB+ or higher, which led to the exclusion of AltaGas. Concentric adopted the AUC's North American proxy group in our evidence in the GCOC proceeding in Alberta in 2023.

e) See response to subpart (c) above. Because Enbridge Inc. was not included in Concentric's analysis in the referenced Alberta GCOC proceeding, we are unable to confirm this information.

f) Confirmed. Concentric notes that the values cited in (i) do not include the 50-bps flotation cost adjustment, while the values in (ii) do. In addition, we note that the constant-growth DCF results did not inform our final recommendation; the multi-stage DCF results did. In addition, our recommendation was based on the North American Combined proxy group, not the Canadian proxy group.

Ontario Energy Association (OEA)

Answer to Interrogatory from
Association of Major Power Consumers in Ontario (AMPCO) / Industrial Gas Users Association (IGUA)

INTERROGATORY

Reference:

On pages 50-55, Concentric discusses the integration of Canadian and U.S. capital markets in order to justify its heavy reliance on U.S. utilities (it includes 19 of 25 U.S. utilities in its North American proxy group, which it bases all of its ROE and ER estimates upon). As part of its discussion, Concentric's Figure 9 (on page 54), includes a 2021 assessment of country risk ratings provided by UBS.

Question(s):

a) Please confirm that the UBS sovereign risk ratings at the time of the 2021 assessment referenced above were A for Canada and AA for the U.S.

b) Please confirm that more recent (January 2024) data;
   i) rates Canada's sovereign debt at AAA (both S&P and DBRS) and Aaa (Moody's)1; and
   ii) rates U.S. sovereign debt as AA+ (S&P) and AAA (DBRS) and Aaa (Moody's).

   If not confirmed, please provide corrected ratings and sources therefore.

c) Would Concentric agree that there is a "home bias" among investors, not only from Canada, but also globally. (For example, while Canadian equities generally represent less than 3% of world stock markets (e.g., 2.9% as of September 30, 2021) Canadian investors (including institutions) had a domestic allocation for equities over 40% in 2020.2 The home bias is even more dramatic in Canadian fixed income markets, which similarly comprise about 3% of global fixed income markets, but Canadian investors had a domestic allocation for fixed income of approximately 84%.)

   If not confirmed, please explain and provide empirical support for any such explanation.

d) Please confirm that U.S. yields have been higher than Canada yields for several years, and that this is still the case. (For example, as shown in Figure 7 of Dr. Cleary's evidence: the short-term U.S. rates of one year or less were 0.6-0.7% above Canadian rates, while two-year U.S. rates were about 0.8% higher, with 5- and 10-year U.S. yields being about 0.90% higher, and 30-year yields being over 1.1% higher.)

   If not confirmed, please explain.

e) In light of the information cited in questions (c) and (d), does Concentric believe that Ontario utilities would choose to borrow at higher rates in the U.S. and suscept themselves to currency risk, on top of paying higher interest costs? If so, please elaborate on the basis for this belief.

f) Please provide specific examples over the past five years of Ontario utilities accessing debt and/or equity capital from the U.S. that was of comparable quantity to the amount of debt and/or equity capital that was sourced in Canadian capital markets.

g) Please provide specific examples over the past five years of U.S. utilities accessing debt and/or equity capital from Canada that was of comparable quantity to the amount of debt and/or equity capital that was sourced in U.S. capital markets.

Response:

a) Concentric confirms that the sovereign risk ratings at the time of the referenced 2021 assessment (by the Economist Intelligence Unit) were A for Canada and AA for the U.S. Please note that Concentric's reference is to the risk ratings published by the Economist Intelligence Unit as described in Footnote 59 in Exhibit M2, not UBS. The sovereign risk ratings from the Economist Intelligence Unit consider a different set of information about a country's economy than a credit rating agency might consider when it assigns a sovereign credit rating.

b) Concentric confirms (i) and (ii).

c) "Home bias" refers to an investor's tendency to invest a majority of their portfolio in domestic equities or to have a concentrated exposure to their employer's stock rather than diversifying by investing in foreign equities. Systematic risk is reduced by investing in foreign equities because they are not fully impacted by changes in domestic markets. Concentric does not agree that there is "home bias" among investors in the utility industry. For example, as shown in the table below, there have been approximately two dozen acquisitions of U.S. utilities by Canadian utility holding companies since 2000. This track record does not suggest a "home bias"

from Canadian investors.

**Figure 43: Cross-Border Utility Acquisitions**

| Buyer | Target | Deal Value (US$Millions) | Year Closed |
|---|---|---|---|
| **Canadian Buyers Acquiring U.S. Utilities Since 2000** | | | |
| Enbridge Inc. | Public Service Co. of NC | $4,297 | Pending |
| Enbridge Inc. | Questar Gas Co. | $5,798 | 2024 |
| Enbridge Inc. | East Ohio Gas Company | $8,917 | 2024 |
| ENMAX Corporation | Emera Maine | $959 | 2020 |
| Liberty Utilities Co. | St. Lawrence Gas Company, Inc. | $65 | 2019 |
| AltaGas | WGL Holdings Inc. | $6,955 | 2018 |
| Algonquin Power & Utilities | Empire District Electric Co | $2,349 | 2017 |
| Fortis Inc. | ITC Holdings Corp | $11,577 | 2016 |
| Emera Inc. | TECO Energy Inc. | $10,585 | 2016 |
| Caisse de dépôt et placement | IPALCO Enterprises Inc. | $134 | 2016 |
| Caisse de dépôt et placement | IPALCO Enterprises Inc. | $247 | 2015 |
| Algonquin Power & Utilities | New Hampshire Gas Corp | $3 | 2015 |
| Fortis Inc. | UNS Energy Corp | $4,383 | 2014 |
| Algonquin Power & Utilities | New England Gas Company | $74 | 2013 |
| Fortis Inc. | CH Energy Group Inc. | $1,526 | 2013 |
| Algonquin Power & Utilities | Natural Gas Distribution Operations | $141 | 2013 |
| Algonquin Power & Utilities | California Pacific Electric Co. | $39 | 2012 |
| AltaGas | SEMCO Holding Corp | $1,156 | 2012 |
| Algonquin Power & Utilities | Midwest Natural Gas Distribution | $124 | 2012 |
| Algonquin Power & Utilities | Granite State / EnergyNorth | $285 | 2012 |
| Gaz Metro LP | Central Vermont Public Service | $700 | 2012 |
| Emera Inc | Maine & Maritimes Corporation | $99 | 2010 |
| Gaz Métro LP | Green Mountain Power Corp | $293 | 2007 |
| NS Power Holdings Inc. | Bangor Hydro-Electric Co. | $365 | 2001 |
| **Total U.S. Acquisitions by Canadian Utilities** | | **$61,071** | |

d) Concentric agrees that U.S. government bond yields have generally been higher than Canadian government bond yields for the past several years, and this continues to be the case as of July 2024. However, as discussed on pages 65-66 of Concentric's report, Exhibit M2, the *Financial Post* recently reported that bond yields in Canada and the U.S. are expected to converge. This is consistent with the April forecast from Consensus Economics, which shows the spread between 10-year government bond yields in Canada and the U.S. narrowing from 70 basis points in 2025 to between 20 and 40 basis points by the end of the decade, as shown in the table below.

**Long-Term Forecast for 10-Year Government Bond Yields**[1]

| | 2025 | 2026 | 2027 | 2028 | 2029 | 2030-2034 |
|---|---|---|---|---|---|---|
| Canada | 3.1% | 3.1% | 3.2% | 3.2% | 3.5% | 3.4% |
| U.S. | 3.8% | 3.8% | 3.6% | 3.6% | 3.7% | 3.7% |

e) Concentric believes corporate borrowers would borrow in one market versus another based on many factors beyond the difference in government bond rates, including credit spreads offered by investors, forward exchange rates compared to spot rates, underwriting commissions, etc. Further, it is reasonable to assume that corporate borrowers would hedge against currency risk.

f) Concentric did not conduct an exhaustive search. However, Concentric is aware that Hydro One files debt in US GAAP. In addition, Enbridge Inc. (the parent of Enbridge Gas, Inc.) is traded on both the TSX and the NYSE. Outside of Ontario, Enbridge Inc. and Fortis have issued US-denominated debt.

g) Concentric did not conduct an exhaustive search. Please see the response to part c), however, which provides several examples of Canadian and Ontario utilities that have acquired U.S. utilities, whereby those U.S. utilities are utilities accessing debt and/or equity capital from Canada. In addition, investors may seek capital diversification and access to new markets, particularly as capital programs grow during the energy transition. An example of this is the maple bond market, in which utility companies have participated. For instance, Concentric is aware of NextEra issuing maple bonds in the range of C$1 billion.

[1] Consensus Forecasts by Consensus Economics Inc., Survey Date April 8, 2024, at 3 and 29.

Ontario Energy Association (OEA)

Answer to Interrogatory from
Association of Major Power Consumers in Ontario (AMPCO) / Industrial Gas Users Association (IGUA)

INTERROGATORY

Reference:

On pages 58-62, Concentric discusses its approach to estimating growth rates to be used in determining its constant-growth and multi-stage growth DCF estimates. On page 59, Concentric justifies its use of analyst growth forecasts, stating (bold added for emphasis):

> ***Some intervenors and utility regulators in Canada have expressed concern that analysts' earnings growth rates may be overly optimistic, and LEI makes this assertion in its report in this proceeding****. If optimism bias were present in analysts' earnings forecasts, it* ***could create an upward bias in the estimated cost of capital*** *that results from the DCF approach. To control for this concern, some analysts have used GDP growth as a proxy for long-term earnings growth.* ***We, however, do not share the view that analysts' earnings growth rates are biased, as discussed below.***

On page 60, Concentric states (bold added for emphasis):

> Both average earnings and average dividend growth for the three North American proxy groups exceeded actual GDP growth over the period. This is unsurprising, as earnings for utilities can, and do, exceed the growth of the overall economy. As evidenced by the data, **there is no fundamental basis to assume that economy-wide GDP growth with a mix of macroeconomic, social and business drivers serves as a limit on utility earnings or dividend growth.**

Alberta Utilities Commission Decision 2191-D01-2015, 2013 Generic Cost of Capital, paragraph 190 [footnote omitted, bold added for emphasis):

> However, the Commission is also mindful that, as both experts acknowledged, **the GDP growth rate may be an ambitious target** for long-run earnings growth in respect of low-risk, mature, utilities.

Question(s):

a) During the Alberta Utilities Commission 2018 Generic Cost of Capital proceedings Mr. Coyne's written Rebuttal Evidence3 cited research by Easton and Sommers which Mr. Coyne noted "has put the "optimism" bias in analysts' growth forecasts at an average of 2.84 percent." Does Mr. Coyne accept the validity of the research findings so cited? If not, please explain why not.

b) Please provide all data and workpapers (in excel format), including all formulas and calculations, used to prepare Figure 10 in Concentric's report.

c) Please explain why Figure 10 includes EPS growth forecasts for 2027-29 (three years from now), and GDP growth forecasts for 2030-2034 (six years from now)?

d) Please confirm that;
   i. The data used to construct Figure 10 is based on data for the 25 utilities included in Concentric's North American proxy group.
   ii. 19 of these utilities are U.S. companies.
   iii. Most (if not all) of the 25 companies are holding companies and not regulated operating utilities.

   If not confirmed, please explain.

e) Please confirm that Concentric's evidence shows that historical EPS growth (which it accentuates is the appropriate measure of growth estimates) for its sample of mainly U.S. and holding utility companies was 4.93% over the 2009-2023 period, while its estimate of GDP growth over the period was 4.59%, **just 0.34% lower**. If not confirmed, please explain.

f) Please confirm that in contrast to the small difference in historical EPS growth versus GDP growth for Concentric's sample of mainly U.S. and holding utility companies, Concentric's average growth rate estimate for its Canadian proxy group of 5.27% exceeds Concentric's estimate of Canadian GDP growth of 3.84% **by 1.43%**, while its average growth rate estimate for its North American proxy group of 5.98% exceeds Concentric's estimate of North American GDP growth of 3.99% by **1.99%**. If not confirmed, please explain.

g) Does Mr. Coyne agree with the Alberta Utilities Commission statement excerpted in the references for this interrogatory? If not, please explain Mr. Coyne's view in respect of that statement and the rationale for that view.

Response:

a) No, Mr. Coyne cannot attest to the validity of the results from the Easton and Sommers research. This paper was published in 2006, using data from 1993-2004, which precedes the regulatory reforms addressing potential conflicts of interest in equity analyst opinions. Concentric does not cite this paper directly in its 2018 rebuttal evidence in Alberta. Mr. Coyne cites a textbook authored by Dr. Cleary and Dr. Booth (which cites the Easton and Sommers paper) and based on this research they advocate for the use of a multi-stage DCF model to mitigate this potential bias. We point out the fact that Dr. Cleary's evidence in Alberta, which relies on a sustainable growth model, is inconsistent with the approach advocated in their own textbook. According to Dr. Booth's and Dr. Cleary's textbook, use of the two-stage DCF model mitigates concerns about analyst bias. This is the approach Concentric has utilized in its analysis and recommendations in this case, whereas Dr. Cleary has not used that approach. As pointed out in Mr. Coyne's rebuttal in Alberta "But instead of using this more conventional approach advocated in his co-authored textbook, Dr. Cleary invents a "sustainable growth" version of the DCF model, which produces unreasonable results." This same criticism applies to Dr. Cleary's evidence in this proceeding.

b) Please see IGUA-AMPCO-6(b), Attachment 1 for the requested workpaper.

c) The EPS growth forecasts in Figure 10 are based on projected EPS growth rates from equity analysts, which typically cover the next three to five years. The GDP growth rate forecasts are for 2030-2034 because that is the time period covered by the report from Consensus Economics. The other available time period from Consensus Economics would be from 2025-2029. Concentric selected the 2030-2034 period because it provides a longer-term view of GDP growth.

d) Confirmed, as to subparts (a) and (b). With respect to subpart (c), Portland General Electric Company is the only company in Concentric's proxy group that is not a holding company. The other proxy group companies are holding companies and not operating utilities by necessity, because the market data required for the ROE models is available at the holding company level, not the operating company level. All the witnesses in this proceeding, including Dr. Cleary, have used market data for the holding companies in their respective proxy groups.

e) Confirmed.

f) Confirmed.

g) No. Concentric does not agree that GDP growth may be an ambitious target for long-term earnings growth for regulated utilities. The evidence in Figure 10 of Concentric's report, Exhibit M2, demonstrates that earnings growth and dividend growth for the proxy group companies historically have exceeded nominal GDP growth in both Canada and

the U.S. Further, Concentric has used the Multi-Stage DCF model in order to temper the effect of short-term earnings growth rates that may not be sustainable. The Alberta Utilities Commission also has employed the Multi-Stage DCF model for this same reason, including in the recent October 2024 decision in Proceeding 27084.

This page is intentionally left blank. Due to size, this Attachment has not been included.

Please see Exhibit N-M2-10-AMPCO/IGUA-6(b)_Attachment 1.xlsx on the OEB's RDS.

Ontario Energy Association (OEA)

Answer to Interrogatory from
Association of Major Power Consumers in Ontario (AMPCO) / Industrial Gas Users Association (IGUA)

INTERROGATORY

Reference:

On pages 58-62, Concentric discusses its constant-growth and multi-stage growth DCF estimates, which Concentric reports in Figure 13, based on calculations reported in Exhibit CEA-4 and CEA-5 of its Appendix.

Question(s):

a) Please confirm that the average Canadian proxy group Constant-Growth DCF estimates provided in Figure 13 are based on an average future long-term growth rate (to infinity) of 5.27%, which exceeds Concentric's estimate for Canadian GDP growth of 3.84% **by 1.43%**. If not confirmed, please explain.

b) Please confirm that the average North American proxy group Constant-Growth DCF estimates provided in Figure 13 are based on an average future long-term growth rate (to infinity) of 5.98%, which exceeds Concentric's estimate for North American GDP growth of 3.99% by **1.99%**. If not confirmed, please explain.

c) Please confirm that using a long-term growth rate in the Constant-Growth DCF model assumes that this growth rate persists to infinity, and not just for a period of 10 years or less. If not confirmed, please explain.

d) Exhibit CEA-4 reports the Constant-Growth DCF Ke estimate for the North American proxy group of 10.59% (before flotation costs). Please confirm this 10.59% estimate is based on the sum of the long-term growth estimate of 5.98%, and an expected dividend yield (DY) of 4.61% both of which are provided in Exhibit CEA-4. If not confirmed please provide the correct estimates used.

e) Please confirm in its multi-stage DCF model, that Concentric assumes the higher analyst growth rates exist for a full 5 years, then gradually decline over the following 5 years to a stable long-term growth rate equal to its estimate of long-term nominal GDP growth. Therefore, this approach assumes that utilities' earnings and dividends will grow at rates above nominal GDP growth for 10 years, then will grow at estimated nominal GDP growth from year 11 to infinity. If not confirmed, please clarify.

f) Exhibit CEA-5 provides the multi-stage DCF Ke estimate for the North American proxy group of 9.45% before flotation costs. According to Exhibit CEA-5 (and Figure 11), this estimate is based on a growth rate of 5.98% for years 1-5, an average growth rate of 4.99% for years 6 through 10, followed by long-term growth of 3.99% from years 11 to infinity. Please confirm that the long-term growth rate that would also lead to a 9.45% Ke estimate (pre-flotation costs) for the North American proxy group in the Constant-Growth DCF model, based on an expected dividend yield (DY1) of 4.61% would be 4.45% (given the Constant-Growth DCF model Ke (9.45%) = DY1 + g = 4.61% + 4.84%).

   If not confirmed, please provide the correct corresponding long-term growth rate in the Constant-Growth DCF model that would result in a Ke estimate of 9.45% for the North American proxy group, based on its DY1 of 4.61%.

g) Please confirm the implied long-term growth rate of 4.84% determined in part (h) above is well above Concentric's estimate of North American long-term nominal GDP growth of 3.99%. If not confirmed, please explain.

h) Does Concentric agree that the analysis included in parts (f) and (g) above demonstrate that Concentric's growth forecasts used in obtaining its multi-stage DCF estimates provide results are equivalent to using a growth rate of 4.84% in a Constant-Growth DCF model, which exceeds Concentric's 3.99% estimate of expected North American nominal GDP growth? If not, please explain why not.

Response:

a) Confirmed. However, as explained in Concentric's report, Exhibit M2, our recommended base ROE of 10.0% is based on the average results of the multi-stage DCF model, the CAPM using a historical MRP, and the Risk Premium analysis. The Constant Growth DCF results were not included in our ROE recommendation in this proceeding.

b) Confirmed as to the average growth rate for the North American Combined proxy group.

c) The Constant Growth DCF results were not included in our ROE recommendation, however, yes, one of the assumptions of the Constant Growth DCF model is that the growth rate continues in perpetuity.

d) Confirmed for the North American Combined proxy group.

e) This cannot be confirmed. As shown in Exhibit CEA-5, at least one company (Canadian Utilities Inc.) in the North American Combined proxy group has a lower

EPS growth rate in Stage 1 than the GDP growth rate in Stage 3. The short-term EPS growth rates for several other companies (Emera Inc. and ONE Gas Inc.) are similar to the long-term GDP growth rates. As explained in Concentric's report, Exhibit M2, the Multi-Stage DCF model is intended to allow for the use of varying growth rates in the three stages. The growth rate in Stage 1 is not always materially higher than the growth rate in Stage 3, as the question assumes.

f) The Constant Growth DCF results were not included in our ROE recommendation, that being said, it is confirmed that the growth rate would be 4.84% (not 4.45% as referenced once in the question).

g) The Constant Growth DCF results were not included in our ROE recommendation, however confirmed.

h) First, as stated in the response to part (a) above, Concentric's base ROE recommendation of 10.0% for Ontario's utilities does not include the results of the Constant Growth DCF model. Further, Concentric does not agree that this is the correct way to interpret the results of the Multi-Stage and Constant Growth DCF models. This is because current stock prices for the proxy group companies are based on investor assumptions regarding near-term growth and longer-term growth. As discussed in Concentric's report, it is entirely possible, if not probable, that utilities will realize EPS growth rates above GDP growth in the near to intermediate term as they make the investments necessary to facilitate the Energy Transition and to achieve the carbon reduction objectives of the Canadian federal and Ontario provincial governments.

Ontario Energy Association (OEA)

Answer to Interrogatory from
Association of Major Power Consumers in Ontario (AMPCO) / Industrial Gas Users Association (IGUA)

INTERROGATORY

Reference:

On pages 64-66, Concentric discusses its risk-free (RF) rate estimates that it uses in its CAPM Ke calculations.

Question(s):

a) Please provide the April 2024 Consensus Economic forecast document used to support these estimates, which is referenced in footnote 75 on page 65.

b) Given that pages 41-42 of Concentric's evidence show that the deemed long-term debt rates (based on forecast yields) averaged +0.40% higher than the actual yields, please explain why Concentric chose to rely on "forecasts" for 10-year Canada yields and then estimates a spread it adds to this forecast to estimate 30-year Canada yields.

c) Please explain why Concentric added the 0.33% historical spread between 10- and 30-year Canada bond yields, rather than the current negative spread (in Canada) that Concentric noted on page 64 of its evidence.

d) Please confirm that in the CAPM, RF represents the actual existing risk-free asset that an investor can invest in today and earn the risk-free rate of return. If not confirmed, please explain.

e) Please explain how a Canadian investor today could buy a 30-year Government of Canada bond promising a risk-free rate of return of 3.46% (i.e. Concentric's estimated Canadian RF), when available 30-year Canada bonds are trading at prices that provide a yield of 3.30%?

Response:

a) Please see AMPCO/IGUA-8(a), Attachment 1 for the requested report.

b) The cost of capital is a forward-looking estimate that represents investors' return requirements based on their expectations for interest rates, inflation, GDP growth,

earnings growth, utility risk as measured by beta, and other market data and economic indicators. Therefore, Concentric believes it is reasonable to use forecasts of 30-year government bond yields rates as the risk-free rate in the CAPM analysis rather than historical average interest rates.

c) The spread between 10- and 30-year Canadian government bond yields has been inverted in recent months. However, more typically the yield on 30-year bonds is higher than the yield on 10-year bonds because investors require a higher return for the longer term of the security. Because market conditions are atypical, Concentric has used the 10-year average spread between 10- and 30-year Canadian government bonds and added that to the forecast of the 10-year government bond from Consensus Economics. Concentric has used this approach in our evidence before regulators in British Columbia, Alberta, Nova Scotia, and Newfoundland and Labrador.

d) As indicated in the response to part (b) above, the estimation of the cost of equity is a forward-looking analysis. Concentric believes that the risk-free rate in the CAPM analysis should be based on a forecast government bond yield, not a historical average or a recent spot yield on a particular day. The current Ontario formula relies on forecast government bond yields, and other utility regulators in Canada including the BCUC and the AUC also rely on bond yield forecasts to set the authorized ROE.

e) The yield on 30-year Government of Canada bonds ranged from 3.19% to 3.74% in the 90-day period ending June 28, 2024, so it would have been possible for an investor to buy 30-year bonds at 3.46% during that period. Nevertheless, the risk-free rate in the CAPM analysis should be based on the interest rate that investors are expecting during an upcoming future period, such as the next three or five years, not the interest rate an investor would receive today if they were to purchase a particular bond.

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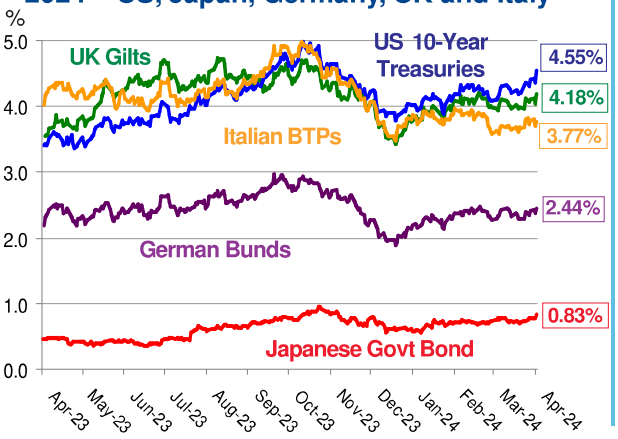
## Inflation and Interest Rates – Higher for Longer

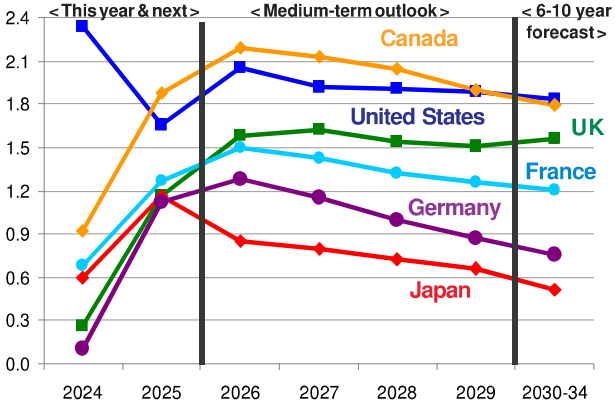
The divergence between US economic momentum and the rest of the G7 continues. A stronger-than-expected US jobs report, coupled with headline CPI unable to sink below the 3%-mark (it actually jumped by 3.5% y-o-y in March), are forcing financial markets to confront the likelihood that the Fed will delay cutting policy rates. US long-term bond yields, a key driver of borrowing costs, have moved higher as the market prices in higher inflation, while gold and oil (which act as hedges against inflation) have soared on the back of tight supply and strained geopolitics. The US dollar remains strong against other currencies, accentuating the cost of energy, food and other commodities for importing countries. On the domestic side, with US fiscal commitments likely to remain significant going forward, the cost of debt servicing has also been repriced up. Meanwhile, the downturn in European fundamentals looks to be bottoming out, although momentum remains soft. This will put pressure on the ECB and Bank of England to cut rates soon. And, in a small-but-seismic turning of the page, the Bank of Japan exited negative interest rates and yield curve control, cautiously normalising monetary policy as it navigates challenging debt and demographic dynamics.

This month we surveyed our panels for their **Long-Term Forecasts** (see pages 2-3, 28-30). The **Significant Changes** charts (pages 2, 3 and 28) contrast **long-term rolling aggregate forecasts for 2030-34** with comparable previous surveys, some all the way back to April 1996. These are proxies for **potential GDP growth & inflation.**

### 10 Year Nominal Bond Yields until April 10, 2024 – US, Japan, Germany, UK and Italy




### Short- and Long-Term GDP Growth Forecasts – US, Japan, Germany, France, UK, Canada

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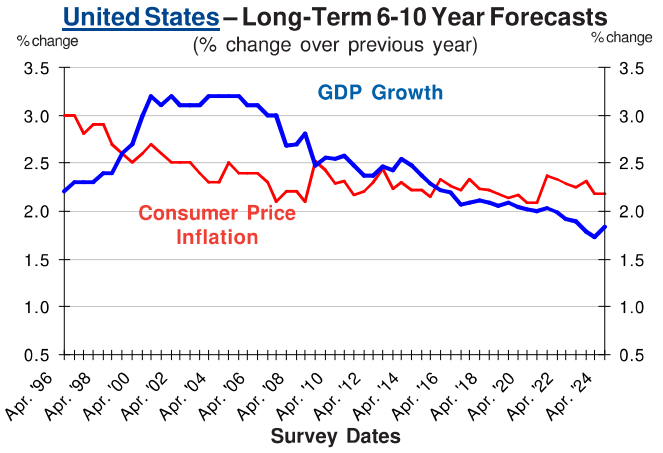
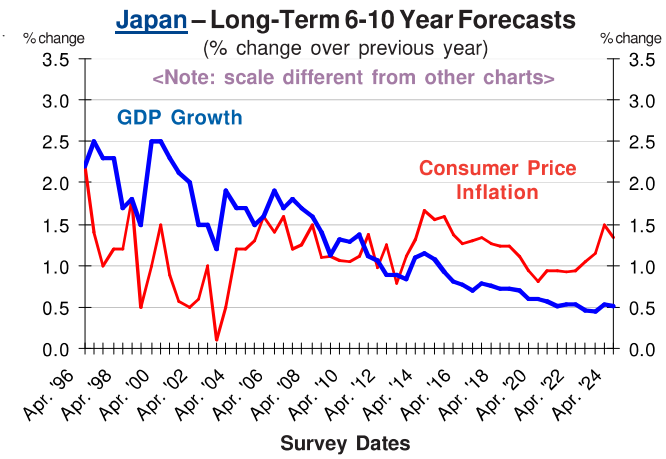
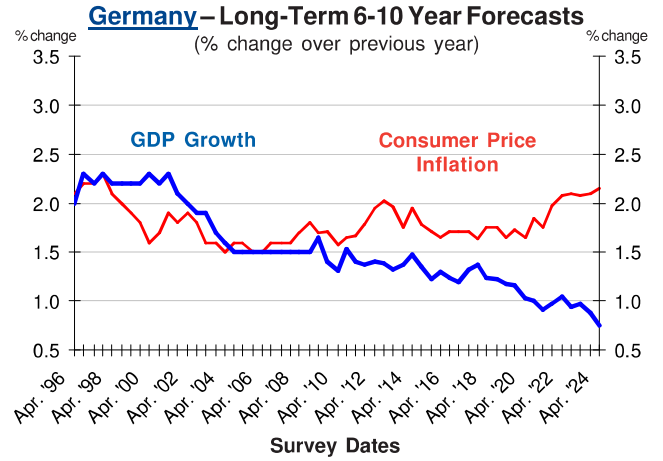
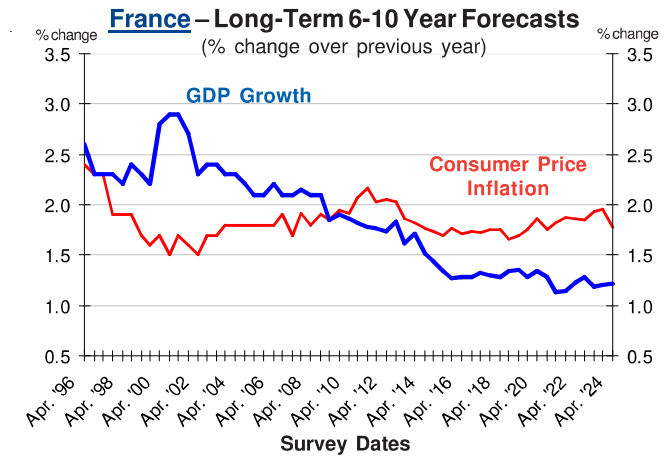
# SIGNIFICANT CHANGES IN THE LONG-TERM CONSENSUS APRIL 2024

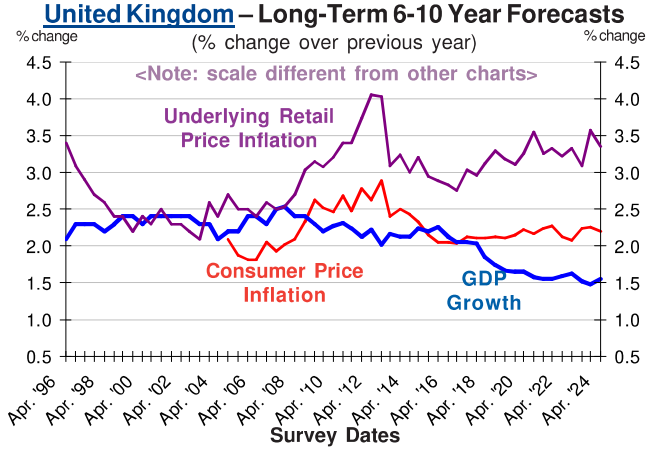
This month, we chart **Significant Changes in Long-Term Forecast Trends for GDP Growth and Inflation** for the **US, Japan, Germany, France,** the **UK, Italy** and **Canada**. Twice-yearly long-term projections for the 6-10 year period averages (in this case 2030-2034) are contrasted with those long-term forecasts surveyed back to April 1996. It is this rolling 6-10 year trendline average which we show in the charts below. The 6-10-year trend averages may be viewed as a measure of **potential GDP and inflation** expectations. This construct has two problems, however. One is that the 6-10 year horizon is a moving horizon shifting forward one year, each year. The other is that the number of panellists responding to our long-term surveys is smaller and therefore somewhat less representative than the panellist numbers responding to our one and two-year surveys on pages 4-24.

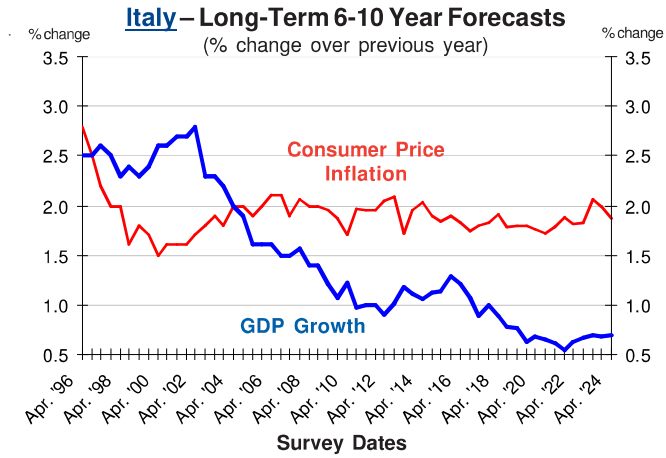


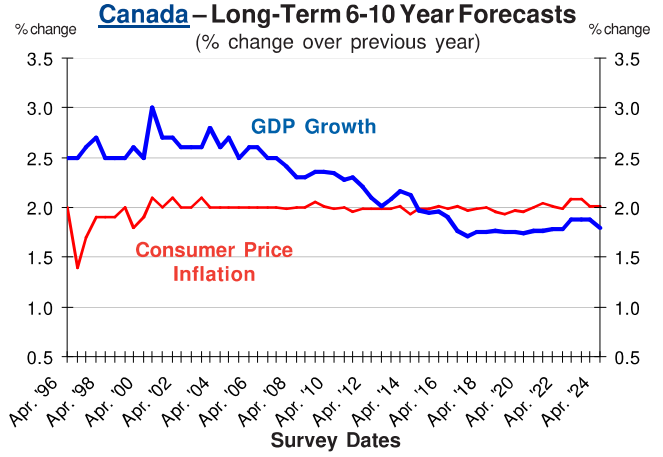



In addition to their regular forecasts, country panellists were asked to provide longer-term forecasts covering the period until 2034 for growth in real GDP, consumer spending, investment and industrial production, along with consumer price inflation, current account balances and long-term bond yields. Definitions correspond to those used in the individual country pages.

## United States

| * % change over previous year | Historical | | | | Consensus Forecasts | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030-34[1] |
| **Gross Domestic Product*** | -2.2 | 5.8 | 1.9 | 2.5 | 2.3 | 1.7 | 2.1 | 1.9 | 1.9 | 1.9 | 1.8 |
| **Personal Consumption*** | -2.5 | 8.4 | 2.5 | 2.2 | 2.2 | 1.7 | 2.0 | 2.0 | 2.0 | 2.0 | 1.9 |
| **Business Investment*** | -4.7 | 5.9 | 5.2 | 4.5 | 2.2 | 2.6 | 3.5 | 3.2 | 3.0 | 2.9 | 2.9 |
| **Industrial Production*** | -7.2 | 4.4 | 3.4 | 0.2 | 0.1 | 1.5 | 2.3 | 2.1 | 2.0 | 1.9 | 1.8 |
| **Consumer Prices*** | 1.2 | 4.7 | 8.0 | 4.1 | 2.9 | 2.2 | 2.3 | 2.2 | 2.2 | 2.2 | 2.2 |
| **Current Account Balance (USbn)** | -597 | -831 | -972 | -819 | -863 | -900 | -928 | -936 | -923 | -893 | -863 |
| **10 Year Treasury Bond Yield, %[2]** | 0.9 | 1.6 | 3.9 | 3.9 | 4.1[3] | 3.8[4] | 3.6 | 3.6 | 3.6 | 3.7 | 3.7 |

The **G7 & Western Europe** has seen rapid progress on disinflation from its peak of 2022-2023 (price pressures resulted from the post-pandemic era of pent-up demand, fiscal largesse, acute labour shortages, and supply-chain disruption). Years of 0%-related inflated asset values have been repriced upward as central banks tightened monetary policy, and war in Ukraine pushed up already-percolating price pressures. This, coupled with cooling relations between the **US** and **China**, reconfigured geopolitics and ushered in a new era of competitive protectionism, i.e., country-first industrial policies which moved away from globalisation. This makes cooperation on major challenges difficult. Instead, countries are now in a race with each other to attract new-economy industries and secure resources as part of the global shift towards clean(er) energy. Infrastructure projects and increased military spending will need financing, but after 15 years of money-printing to support monetary and fiscal stimulus, the **G7** governments face higher borrowing costs, softer growth dynamics and a narrowing pool of taxpayers. This will add to debt loads which, along with bond market scrutiny, will eventually necessitate fiscal consolidation. And while immigration and AI/automation are possible solutions to the **G7's** demographic and growth challenges, they remain politically unpopular and potentially disruptive.

## Japan

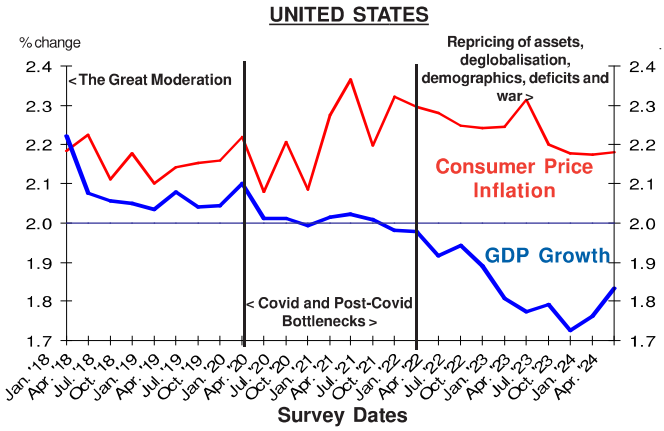
| * % change over previous year | Historical | | | | Consensus Forecasts | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030-34 |
| **Gross Domestic Product*** | -4.1 | 2.6 | 1.0 | 1.9 | 0.6 | 1.2 | 0.9 | 0.8 | 0.7 | 0.7 | 0.5 |
| **Private Consumption*** | -4.4 | 0.8 | 2.2 | 0.6 | 0.2 | 1.1 | 0.8 | 0.8 | 0.6 | 0.6 | 0.4 |
| **Business Investment*** | -4.9 | 0.5 | 1.9 | 2.1 | 2.0 | 2.3 | 1.8 | 1.7 | 1.5 | 1.5 | 1.0 |
| **Industrial Production*** | -10.9 | 5.8 | 0.0 | -1.4 | -0.6 | 2.9 | 1.8 | 1.6 | 1.5 | 1.4 | 0.6 |
| **Consumer Prices*** | 0.0 | -0.2 | 2.5 | 3.3 | 2.4 | 1.8 | 1.6 | 1.6 | 1.5 | 1.4 | 1.3 |
| **Current Account Balance (¥tn)** | 15.8 | 21.4 | 10.0 | 21.0 | 23.3 | 22.9 | 23.1 | 22.2 | 21.9 | 19.3 | 14.4 |
| **10 Year Treasury Bond Yield, %[2]** | 0.0 | 0.1 | 0.4 | 0.6 | 0.9[3] | 1.0[4] | 1.1 | 1.1 | 1.2 | 1.2 | 1.3 |

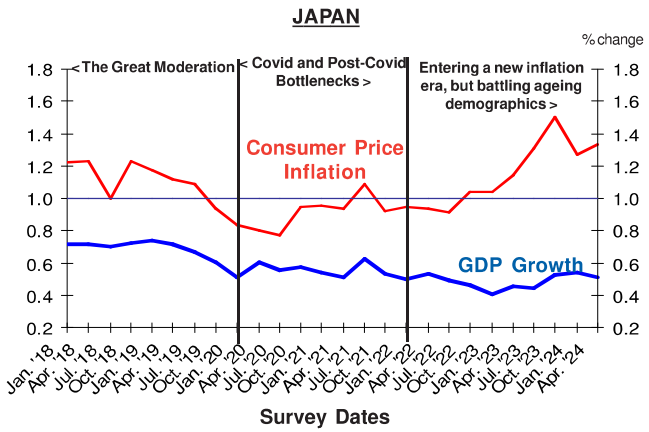
[1] *Signifies average for period* [2] *End period* [3] *End July 2024* [4] *End April 2025*

We have 'telescoped' the **6-10 year rolling-period average of GDP and CPI forecasts (collected four times a year)** from **January 2018 to April 2024**. This encapsulates the Great Moderation era of globalisation and 0% interest rates, followed by the Covid and Post-Covid era, and finally the current period. Inflection points like war in Ukraine, inflation, rapidly tightening monetary policies have triggered a reset in geopolitics and globalisation, not to mention repriced assets, labour and debt.

### United States and Japan – Long-Term 6-10 Year Forecasts between January 2018 - April 2024

(annual % change over previous year)



# UNITED STATES — APRIL 2024

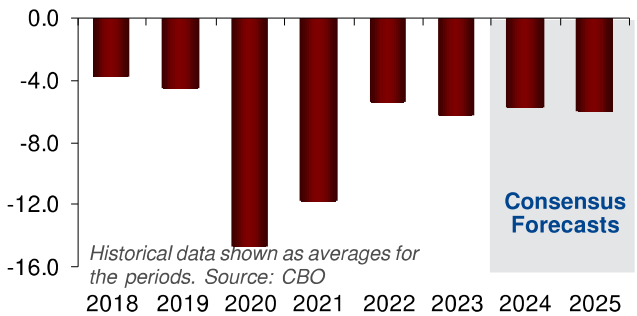
| | Average % Change on Previous Calendar Year | | | | | | | | | | | | | | | | | | Annual Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gross Domestic Product | | Personal Consum-ption | | Business Invest-ment | | Pre - Tax Corporate Profits | | Industrial Product-ion | | Con-sumer Prices | | Core PCE Prices (ex. food & energy) | | Producer Prices | | Employ-ment Costs | | Auto & Light Truck Sales (inc. imports, mn units) | |
| Economic Forecasters | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 |
| Goldman Sachs | 2.9 | 2.2 | 2.5 | 2.3 | 2.9 | 3.6 | na | na | 2.1 | 3.7 | 3.1 | 2.4 | 2.5 | 2.1 | na | na | na | na | na | na |
| Oxford Economics | 2.7 | 1.8 | 2.4 | 2.0 | 2.4 | 4.9 | 6.0 | 4.0 | 0.5 | 2.1 | 2.9 | 2.3 | 2.5 | 2.0 | 1.7 | 1.7 | 3.6 | 3.3 | 15.9 | 16.8 |
| Visa Business & Econ | 2.6 | 2.4 | 2.4 | 2.2 | 2.4 | 3.3 | 3.1 | 3.2 | na | na | 2.8 | 1.6 | 2.6 | 1.7 | na | na | na | na | 15.4 | 16.6 |
| Moody's Analytics | 2.6 | 1.6 | 2.8 | 2.1 | 3.9 | 1.9 | 7.6 | -2.3 | 0.5 | 1.4 | 2.9 | 2.4 | 2.3 | 2.0 | -0.4 | 1.3 | 3.4 | 2.8 | 16.1 | 17.3 |
| Barclays | 2.6 | 1.5 | 2.3 | 1.5 | 2.4 | 1.7 | na | na | 0.9 | 1.3 | 3.1 | 2.3 | 2.6 | 2.3 | na | na | na | na | na | na |
| Eaton Corporation | 2.5 | 2.2 | 1.9 | 1.7 | 3.5 | 4.1 | na | na | 0.2 | 2.2 | 2.8 | 2.5 | na | na | 1.7 | 1.6 | na | na | 15.9 | 16.6 |
| Univ of Michigan - RSQE | 2.5 | 1.9 | 2.4 | 1.8 | 2.6 | 2.4 | 7.1 | 4.0 | -0.1 | 1.0 | 3.2 | 2.4 | 3.1 | 2.2 | na | na | na | na | 15.7 | 16.1 |
| Fannie Mae | 2.5 | 1.6 | 2.3 | 2.0 | 1.6 | 2.3 | na | na | na | na | 2.8 | 2.4 | 2.2 | 1.9 | na | na | na | na | 15.7 | 16.2 |
| Georgia State University | 2.5 | 1.5 | 2.1 | 1.5 | 2.5 | 3.3 | 4.6 | 1.0 | -0.6 | 0.6 | 2.4 | 1.6 | 2.7 | 2.4 | 1.0 | 0.9 | 4.1 | 4.0 | 15.2 | 16.3 |
| Wells Fargo | 2.5 | 1.9 | 2.2 | 1.7 | 2.3 | 3.4 | 0.4 | 5.0 | 0.0 | 2.5 | 3.2 | 2.5 | 2.6 | 2.3 | na | na | 3.8 | 3.4 | 15.4 | 16.6 |
| S&P Global Market Intel | 2.5 | 1.7 | 2.6 | 2.2 | 2.6 | 2.6 | 7.9 | 1.0 | 0.0 | 0.7 | 3.2 | 2.3 | 2.6 | 2.3 | 1.9 | 1.2 | na | na | 15.9 | 16.5 |
| PNC Financial Services | 2.4 | 1.6 | 2.2 | 1.6 | 2.0 | 2.2 | na | na | 0.6 | 1.9 | 2.9 | 2.3 | 2.5 | 2.0 | 1.3 | 2.8 | na | na | 15.4 | 15.0 |
| EY Parthenon | 2.4 | 1.7 | 2.1 | 1.5 | 1.4 | 1.5 | na | na | 0.1 | 1.1 | 3.1 | 2.1 | 2.6 | 2.1 | 0.5 | 0.8 | 3.6 | 3.2 | 15.7 | 15.9 |
| Nat Assn of Home Builders | 2.4 | 1.3 | 2.4 | 1.8 | 1.9 | 1.9 | na | na | na | na | 3.0 | 2.1 | 2.4 | 2.2 | 1.1 | 0.9 | na | na | na | na |
| JP Morgan | 2.4 | 1.7 | 2.2 | 1.3 | 3.4 | 4.2 | 6.4 | 3.4 | 0.2 | 0.7 | 3.1 | 2.3 | 2.6 | 2.1 | na | na | 3.3 | 2.8 | 15.6 | 16.1 |
| Bloomberg Economics | 2.4 | 1.7 | 2.1 | 1.7 | 2.3 | 3.3 | na | na | na | na | 2.8 | 2.0 | na | na | na | na | na | na | na | na |
| Inforum - Univ Maryland | 2.4 | 1.7 | 2.1 | 1.8 | 2.2 | 2.3 | 3.5 | 3.1 | 0.2 | 1.7 | 2.9 | 2.3 | 2.5 | 2.3 | 1.9 | 1.8 | 3.7 | 3.4 | 15.8 | 16.4 |
| BMO Capital Markets | 2.3 | 1.7 | 2.2 | 1.9 | 2.3 | 2.2 | 7.2 | 3.9 | 0.2 | 1.9 | 3.1 | 2.3 | 2.7 | 2.3 | na | na | 4.0 | 3.6 | 15.7 | 16.1 |
| Dynamic Econ Strategy | 2.3 | 1.9 | 2.1 | 1.8 | 1.7 | 2.2 | 2.3 | 3.2 | 0.4 | 1.8 | 3.2 | 3.1 | 2.7 | 2.5 | 1.2 | 1.5 | 3.7 | 3.3 | 15.4 | 15.7 |
| TD Economics | 2.3 | 1.8 | 2.2 | 1.6 | 1.9 | 3.5 | 3.2 | 1.3 | na | na | 3.2 | 2.2 | 2.7 | 2.2 | na | na | na | na | na | na |
| ICIS | 2.2 | 1.7 | 2.1 | 1.6 | 1.9 | 2.7 | 3.1 | 4.1 | 0.1 | 2.0 | 2.9 | 2.3 | 2.5 | 2.2 | 1.8 | 2.1 | 3.7 | 3.4 | 15.8 | 16.3 |
| The Conference Board | 2.2 | 1.5 | 1.9 | 1.3 | 2.5 | 2.5 | na | na | na | na | na | na | 2.4 | 2.0 | na | na | na | na | na | na |
| Royal Bank of Canada | 2.1 | 1.5 | 1.7 | 1.6 | 0.9 | 2.2 | 3.5 | 1.5 | na | na | 2.9 | 2.2 | na | na | na | na | na | na | 15.7 | 14.5 |
| Ford Motor Company | 2.1 | 1.5 | 2.1 | 2.3 | 1.7 | 2.1 | na | na | -0.7 | -0.1 | 2.6 | 2.1 | 2.1 | 2.1 | 1.0 | 1.1 | na | na | na | na |
| Robert Fry Economics | 1.9 | 0.8 | 1.4 | 0.2 | 2.1 | 2.9 | -1.2 | 0.7 | -1.5 | 2.0 | 3.2 | 2.4 | 2.7 | 2.1 | 1.3 | 0.7 | 3.5 | 3.3 | 14.6 | 15.9 |
| First Trust Advisors | 1.9 | 0.5 | 2.1 | 0.8 | 2.1 | 0.5 | na | na | -1.5 | -2.6 | 2.3 | 1.6 | 2.4 | 1.3 | na | na | na | na | 15.5 | 15.5 |
| Econ Intelligence Unit | 1.8 | 1.6 | 2.0 | 1.7 | na | na | na | na | 1.2 | 3.6 | 2.5 | 2.1 | na | na | 1.5 | 1.9 | na | na | na | na |
| Citigroup | 1.5 | 1.7 | 1.6 | 1.9 | -0.4 | 1.0 | na | na | na | na | 3.3 | 2.5 | 2.8 | 2.5 | na | na | na | na | na | na |
| **Consensus (Mean)** | 2.3 | 1.7 | 2.2 | 1.7 | 2.2 | 2.6 | 4.3 | 2.5 | 0.1 | 1.5 | 2.9 | 2.2 | 2.6 | 2.1 | 1.2 | 1.4 | 3.7 | 3.3 | 15.6 | 16.1 |
| Last Month's Mean | 2.2 | 1.6 | 2.0 | 1.7 | 1.8 | 2.4 | 2.9 | 3.1 | 0.2 | 1.3 | 2.8 | 2.2 | 2.5 | 2.1 | 0.7 | 1.5 | 3.7 | 3.3 | 15.7 | 16.2 |
| 3 Months Ago | 1.4 | 1.7 | 1.4 | 1.5 | 1.4 | 2.4 | 1.8 | 3.9 | 0.2 | 1.6 | 2.6 | 2.3 | 2.4 | 2.1 | 1.0 | 1.4 | 3.7 | 3.3 | 15.6 | 16.4 |
| High | 2.9 | 2.4 | 2.8 | 2.3 | 3.9 | 4.9 | 7.9 | 5.0 | 2.1 | 3.7 | 3.3 | 3.1 | 3.1 | 2.5 | 1.9 | 2.8 | 4.1 | 4.0 | 16.1 | 17.3 |
| Low | 1.5 | 0.5 | 1.4 | 0.2 | -0.4 | 0.5 | -1.2 | -2.3 | -1.5 | -2.6 | 2.3 | 1.6 | 2.1 | 1.3 | -0.4 | 0.7 | 3.3 | 2.8 | 14.6 | 14.5 |
| Standard Deviation | 0.3 | 0.4 | 0.3 | 0.4 | 0.8 | 1.0 | 2.7 | 1.9 | 0.8 | 1.3 | 0.3 | 0.3 | 0.2 | 0.2 | 0.6 | 0.6 | 0.2 | 0.3 | 0.3 | 0.6 |
| **Comparison Forecasts** | | | | | | | | | | | | | | | | | | | | |
| CBO (Feb. '24) | 1.8 | 2.0 | 1.6 | 1.7 | 2.2 | 2.7 | | | | | 2.6 | 2.5 | 2.5 | 2.4 | | | 3.9 | 3.5 | | |
| IMF (Jan. '24) | 2.1 | 1.7 | | | | | | | | | | | | | | | | | | |
| OECD (Feb. '24) | 2.1 | 1.7 | | | | | | | | | 2.2 | 2.0 | | | | | | | | |

## Government and Background Data

**President -** Mr. Joseph R. Biden (Democrat). **Congress -** Democrats have retained a majority in the House of Representatives (lower house) and narrowly taken control of the Senate (upper house). **Next Elections** November 5, 2024 (presidential and congressional). **Nominal GDP -** US$25,463bn (2022). **Population -** 333.5mn (IMF, 2022).

## Federal Budget Balance – % of GDP

*(fiscal years)*




## Historical Data

| * % change on previous year | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|
| Gross Domestic Product* | -2.2 | 5.8 | 1.9 | 2.5 |
| Personal Consumption* | -2.5 | 8.4 | 2.5 | 2.2 |
| Business Investment* | -4.7 | 5.9 | 5.2 | 4.5 |
| Pre - Tax Corporate Profits* | -3.5 | 22.6 | 9.8 | 1.5 |
| Industrial Production* | -7.2 | 4.4 | 3.4 | 0.2 |
| Consumer Prices* | 1.2 | 4.7 | 8.0 | 4.1 |
| Core PCE Prices* | 1.3 | 3.6 | 5.2 | 4.1 |
| Producer Prices* | -1.3 | 8.9 | 13.4 | 1.5 |
| Employment Costs* | 2.6 | 3.3 | 4.9 | 4.5 |
| Auto & Light Truck Sales (inc. imports), mn | 14.5 | 14.9 | 13.8 | 15.5 |
| Housing Starts, mn | 1.40 | 1.61 | 1.55 | 1.41 |
| Unemployment Rate, % | 8.1 | 5.4 | 3.6 | 3.6 |
| Current Account, US bn | -597 | -831 | -972 | -819 |
| Federal Budget Balance fiscal years, US bn | -3132 | -2776 | -1375 | -1695 |
| 3 mth Treasury Bill, %, end yr | 0.1 | 0.1 | 4.3 | 5.3 |
| 10 Yr Treasury Yield, %, end yr | 0.9 | 1.6 | 3.9 | 3.9 |

*e = consensus estimate based on latest survey*

| Annual Total | | Year Average | | Annual Total | | Fiscal Years (Oct-Sep) | | Rates on Survey Date 5.2% | | 4.4% | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Housing Starts (mn units) | | Unemployment Rate (%) | | Current Account (US$ bn) | | Federal Budget Balance (US$ bn) | | 3 month Treasury Bill Rate (%) | | 10 Year Treasury Bond Yield (%) | |
| 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | FY 23-24 | FY 24-25 | End Jul'24 | End Apr'25 | End Jul'24 | End Apr'25 |
| 1.47 | 1.54 | 3.8 | 3.7 | na | na | -1700 | -1900 | 5.0 | 4.3 | 4.3 | 4.2 |
| 1.47 | 1.51 | 3.9 | 4.1 | -836 | -883 | -1620 | -1591 | 5.4 | 4.3 | 4.0 | 3.7 |
| 1.38 | 1.42 | 3.9 | 3.7 | na | na | -1582 | -1775 | 5.3 | 3.6 | 4.1 | 3.5 |
| 1.41 | 1.49 | 3.9 | 4.1 | -867 | -893 | na | na | na | na | na | na |
| na | na | 3.9 | 4.0 | -905 | -990 | -1571 | -1781 | 5.0 | 4.3 | 4.4 | na |
| 1.45 | 1.51 | 3.9 | 3.9 | na | na | na | na | na | na | na | na |
| 1.48 | 1.56 | 3.9 | 4.0 | na | na | na | na | 5.1 | 4.5 | 4.2 | 4.1 |
| 1.39 | 1.41 | 4.0 | 4.4 | na | na | na | na | 5.1 | 4.2 | 4.2 | 4.1 |
| 1.41 | 1.45 | 4.1 | 4.3 | -921 | -838 | -1417 | -1514 | 5.0 | 2.9 | 4.2 | 3.0 |
| 1.42 | 1.47 | 3.9 | 3.8 | na | na | -1700 | -1850 | 4.8 | 4.0 | 3.9 | 3.7 |
| 1.43 | 1.38 | 3.8 | 4.1 | -977 | -1057 | na | na | na | na | na | na |
| 1.48 | 1.61 | 3.9 | 4.3 | na | na | na | na | 4.6 | 4.0 | 4.2 | 4.1 |
| 1.50 | 1.59 | 4.0 | 4.1 | na | na | na | na | 5.1 | 3.6 | 4.0 | 3.6 |
| 1.38 | 1.39 | 3.9 | 4.3 | na | na | na | na | na | na | na | na |
| 1.44 | 1.50 | 4.0 | 4.1 | -830 | -904 | -1510 | -1775 | na | na | na | na |
| na | na | 4.3 | 4.6 | na | na | na | na | na | na | 3.8 | 3.2 |
| 1.41 | 1.46 | 4.0 | 4.1 | na | na | na | na | 5.0 | 4.1 | 4.0 | 3.8 |
| 1.46 | 1.48 | 4.0 | 4.1 | -890 | -930 | -1596 | -1749 | 5.5 | 4.4 | 4.1 | 3.8 |
| 1.35 | 1.38 | 4.0 | 4.1 | -855 | -871 | -1700 | -1806 | 5.1 | 4.6 | 4.2 | 4.3 |
| 1.40 | 1.50 | 4.0 | 4.1 | -923 | -996 | na | na | 5.3 | 3.9 | 4.1 | 3.5 |
| 1.47 | 1.50 | 4.0 | 4.1 | na | -891 | -1660 | -1769 | 4.8 | 3.8 | 3.9 | 3.7 |
| na | na | 4.0 | 4.0 | na | na | na | na | na | na | na | na |
| 1.39 | 1.44 | 4.1 | 4.2 | -781 | -850 | na | na | 4.9 | 4.5 | 4.0 | 4.1 |
| 1.36 | 1.32 | 3.9 | 4.4 | na | na | na | na | 4.9 | 4.1 | 4.2 | 4.1 |
| 1.40 | 1.45 | 4.1 | 4.6 | na | na | -1700 | -1800 | 5.1 | 3.2 | 3.9 | 3.5 |
| 1.45 | 1.50 | 4.0 | 4.8 | -863 | -900 | -1700 | -2000 | 5.1 | 3.7 | 4.3 | 4.1 |
| na | na | 4.1 | 4.0 | -804 | -819 | -1724 | -1769 | 5.2 | 4.6 | 4.1 | 3.9 |
| na | na | na | na | -766 | -782 | -1829 | -1800 | 5.3 | 3.8 | na | na |
| 1.43 | 1.47 | 4.0 | 4.1 | -863 | -900 | -1644 | -1777 | 5.1 | 4.0 | 4.1 | 3.8 |
| 1.40 | 1.46 | 4.0 | 4.2 | -850 | -883 | -1660 | -1781 | | | | |
| 1.37 | 1.44 | 4.2 | 4.2 | -827 | -858 | -1733 | -1824 | | | | |
| 1.50 | 1.61 | 4.3 | 4.8 | -766 | -782 | -1417 | -1514 | 5.5 | 4.6 | 4.4 | 4.3 |
| 1.35 | 1.32 | 3.8 | 3.7 | -977 | -1057 | -1829 | -2000 | 4.6 | 2.9 | 3.8 | 3.0 |
| 0.04 | 0.07 | 0.1 | 0.3 | 60 | 74 | 103 | 117 | 0.2 | 0.4 | 0.1 | 0.3 |
| | | 4.2 | 4.4 | | | -1507 | -1772 | | | | |
| | | 3.8 | 3.9 | | | | | | | | |
| | | 4.1 | 4.2 | | | | | | | | |

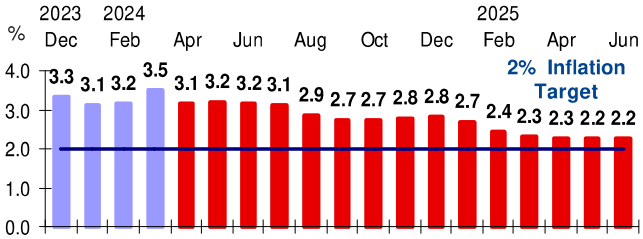
## Jobs and CPI Reports Suggest Rate Cut Delay

March nonfarm payrolls surged by 303,000, significantly stronger than anticipated. For comparison, February payroll gains were at a still-solid 270,000 and January at 256,000. There were few signs of notable weakness in the labor report which is heavily scrutinized by the financial markets, never more so than at present. The Fed funds rate is at a 15-year peak range of 5.25-5.50% from where it has not budged since July 2023. Markets would like the FOMC to start cutting, but the US economy has proved much more resilient than expected. Even the final outturn for Q4 2023 GDP growth was revised up from 3.2% (q-o-q annualized) to 3.4%. This tenacity has propeled asset prices for AI, gold, oil, bitcoin and residential real estate. Last year's momentum is already easing, though. The Atlanta Fed puts current growth around 2.1% (q-o-q annualized), down from the 3.4% in Q4 2023. February retail sales rose +0.6% (m-o-m), only partial recovery from January's -1.1% decline. The Conference Board's leading index has been heading down for some months. Still, US growth relative to other economies currently is notably upbeat. Global manufacturing PMIs are in the doldrums but US manufacturing is still growing, even amid concerns about Red Sea disruption and high oil prices. Consequently, one or two Fed officials are even starting to posit that perhaps there will be no rate cuts at all in 2024.

Headline CPI in March jumped by 3.5% (y-o-y), which essentially rules out a rate cut in the very near future. The economy has so far shrugged off a significant deceleration, but that could still be in the cards if inflation and interest rates remain higher for longer. Another uncertainty is fiscal policy: future spending commitments (green transition, reshoring supply chains, military, healthcare needs) are going to increase along with the cost of servicing that debt.

**Monthly CPI Outturns and y-o-y Consensus Forecasts**

*(% change on the same period of the previous year)*




**US Fed Funds Rate** (Mid-Point of Target Range)
**at April 8, 2024 (mid-point) = 5.375%**

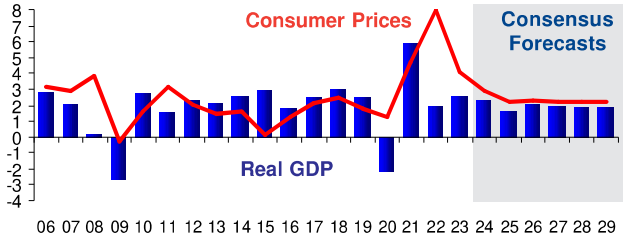
**Average probabilities of a change in the Funds Rate on April 30 - May 1**

**Increase** 0.5% **No change** 94.4% **Decrease** 5.1%

| Consensus Forecasts | End Jun '24 | End Sep '24 | End Dec '24 | End Mar '25 | End Jun '25 | End Sep '25 | End Dec '25 | End Mar '26 |
|---|---|---|---|---|---|---|---|---|
| Mean Average: | 5.193% | 4.898% | 4.574% | 4.245% | 3.970% | 3.767% | 3.563% | 3.385% |
| Mode (most frequent): | 5.125% | 4.875% | 4.625% | 4.375% | 4.125% | 3.875% | 3.625% | 3.375% |

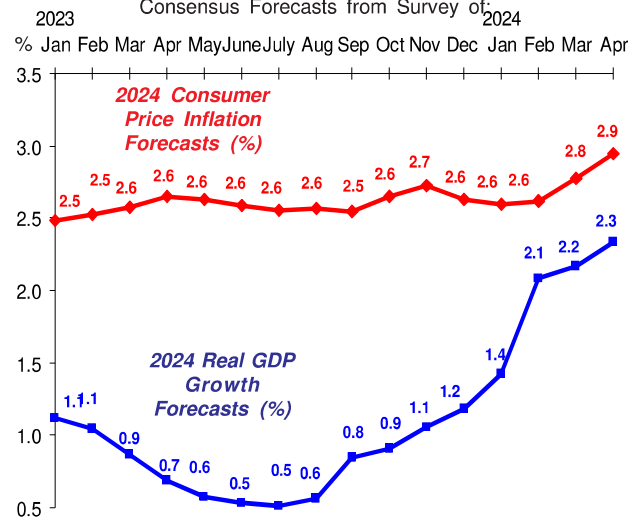
**US Real Growth and Inflation (2005-2028)**

*(% change over previous year)*




**2024 GDP Growth and Inflation Forecasts**

Consensus Forecasts from Survey of:



# JAPAN — APRIL 2024

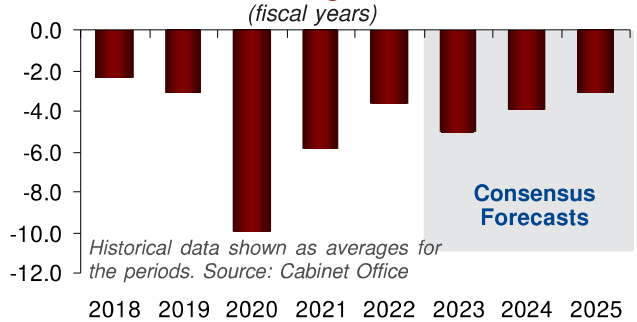
| | Average % Change on Previous Calendar Year | | | | | | | | | | | | | | | | Annual Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gross Domestic Product | | Private Consump-tion | | Business Investment | | Industrial Production | | Consumer Prices | | Core-Core Consumer Prices (ex. all food (less alcohol) & energy) | | Domestic Corporate Goods Prices | | Total Cash Earnings (nominal) | | New Car Registra-tions (mn) | |
| | 国内総生産 | | 民間消費 | | 民間設備投資 | | 鉱工業生産 | | 消費者物価 | | 消費者物価 生鮮食品及び エネルギーを除く | | 卸売物価 | | 現金給与総額（名目） | | 新車登録台数（百万台） | |
| Economic Forecasters | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 |
| Econ Intelligence Unit | 1.3 | 1.2 | 1.0 | 1.5 | na | na | 2.5 | 1.6 | 2.3 | 1.4 | na | na | 1.6 | 1.1 | na | na | na | na |
| Eaton Corporation | 1.1 | 0.8 | 0.7 | 0.4 | 2.0 | 2.0 | 1.8 | 1.5 | 1.7 | 1.0 | na | na | na | na | na | na | na | na |
| ITOCHU Institute | 1.0 | 1.4 | 0.4 | 1.5 | 2.9 | 1.1 | 0.0 | 3.2 | 2.4 | 2.0 | na | na | 0.2 | 0.9 | 2.9 | 3.3 | 2.53 | 2.62 |
| Toyota Motor Corporation | 1.0 | 1.1 | 0.6 | 0.9 | 2.1 | 2.5 | na | na | 2.7 | 2.0 | na | na | na | na | na | na | na | na |
| Euromonitor Intl | 0.9 | 0.9 | 0.8 | 1.0 | na | na | 1.5 | 0.9 | 2.4 | 1.6 | na | na | na | na | na | na | na | na |
| S&P Global Mkt Intelligence | 0.8 | 1.2 | 0.6 | 1.5 | 1.1 | 2.2 | 0.6 | 2.9 | 2.3 | 2.1 | 2.1 | 1.8 | 1.9 | 1.9 | na | na | na | na |
| UBS | 0.8 | 1.2 | -0.1 | 1.1 | na | na | -0.5 | 2.8 | 2.3 | 2.0 | na | na | na | na | na | na | na | na |
| Barclays | 0.7 | 1.2 | 0.1 | 1.6 | 1.9 | 1.1 | -2.9 | 1.7 | 2.5 | 2.2 | na | na | na | na | na | na | na | na |
| Mizuho Research Institute | 0.7 | 1.3 | 0.0 | 0.8 | 2.0 | 2.5 | 0.0 | 3.0 | 2.9 | 2.1 | 2.2 | 1.5 | -0.1 | 1.2 | 2.0 | 2.3 | na | na |
| JP Morgan - Japan | 0.7 | 0.8 | 0.0 | 0.8 | 3.0 | 1.7 | -2.1 | 1.7 | 2.9 | 2.1 | 2.4 | 2.1 | 0.6 | -0.9 | na | na | na | na |
| Deutsche Securities | 0.6 | 1.3 | 0.5 | 1.4 | 2.5 | 2.1 | -0.4 | 3.4 | 2.5 | 2.2 | 2.3 | 2.0 | 1.5 | 2.6 | 2.3 | 2.9 | na | na |
| Daiwa Institute of Research | 0.6 | 1.4 | 0.3 | 1.4 | 1.9 | 2.0 | -0.3 | 3.3 | 2.7 | 2.1 | 2.1 | 2.1 | 1.4 | 2.2 | na | na | na | na |
| Goldman Sachs | 0.6 | 1.2 | 0.3 | 0.6 | 1.3 | 2.8 | -1.2 | 3.5 | 2.5 | 1.8 | 2.1 | 1.6 | na | na | na | na | na | na |
| HSBC | 0.6 | 1.1 | -0.4 | 0.7 | na | na | 1.0 | 1.3 | 2.3 | 1.9 | 2.4 | 1.9 | 2.3 | 1.8 | 1.6 | 1.1 | na | na |
| Oxford Economics | 0.5 | 0.9 | 0.3 | 1.3 | 1.6 | 2.1 | 0.3 | 3.4 | 2.4 | 1.3 | na | na | na | na | 3.2 | 3.9 | na | na |
| Citigroup Japan | 0.5 | 1.5 | 0.1 | 1.1 | 3.2 | 3.3 | -1.6 | 4.0 | 2.3 | 1.9 | na | na | na | na | na | na | na | na |
| Dai-Ichi Life Research | 0.5 | 1.3 | -0.4 | 1.1 | 1.2 | 2.6 | -0.5 | 4.0 | 2.5 | 1.6 | 2.1 | 1.6 | 0.9 | 0.0 | 2.7 | 1.9 | na | na |
| Mitsubishi Research Institute | 0.4 | 1.0 | 0.2 | 1.2 | 2.4 | 2.2 | -1.0 | 4.0 | 2.3 | 2.1 | 2.0 | 2.1 | 1.3 | 1.7 | na | na | na | na |
| NLI Research Institute | 0.4 | 1.4 | -0.1 | 1.1 | 2.2 | 3.4 | -1.2 | 2.8 | 2.6 | 1.8 | 2.2 | 1.7 | 0.8 | 0.6 | 2.4 | 2.7 | na | na |
| Moody's Analytics | 0.1 | 1.1 | -0.4 | 0.9 | 1.8 | 2.5 | -1.3 | 6.4 | 2.0 | 0.9 | 2.0 | 1.5 | na | na | na | na | na | na |
| Japan Ctr for Econ Research | 0.1 | 1.2 | 0.2 | 0.8 | 2.6 | 2.2 | -5.6 | 0.9 | 2.6 | 1.9 | 1.6 | 1.3 | 0.6 | -0.8 | 1.6 | 1.6 | na | na |
| MUFG Bank | 0.1 | na | -0.2 | na | 1.3 | na | -1.2 | na | na | na | na | na | 0.6 | na | na | na | na | na |
| Nomura Securities | 0.0 | 1.1 | 0.5 | 0.8 | 1.2 | 2.8 | -0.2 | 3.7 | 2.3 | 2.0 | 2.3 | 1.9 | 0.9 | 0.0 | 2.3 | 2.2 | na | na |
| Consensus (Mean) | 0.6 | 1.2 | 0.2 | 1.1 | 2.0 | 2.3 | -0.6 | 2.9 | 2.4 | 1.8 | 2.1 | 1.8 | 1.0 | 0.9 | 2.3 | 2.4 | na | na |
| Last Month's Mean | 0.6 | 1.1 | 0.4 | 1.0 | 1.8 | 2.1 | -0.2 | 2.4 | 2.3 | 1.6 | 2.0 | 1.6 | 1.0 | 0.8 | 2.3 | 2.5 | 2.70 | 2.76 |
| 3 Months Ago | 0.8 | 1.0 | 0.8 | 0.8 | 1.6 | 1.9 | 1.1 | 1.7 | 2.2 | 1.5 | 2.0 | 1.7 | 0.4 | 0.5 | 2.3 | 2.4 | 2.84 | 2.83 |
| High | 1.3 | 1.5 | 1.0 | 1.6 | 3.2 | 3.4 | 2.5 | 6.4 | 2.9 | 2.2 | 2.4 | 2.1 | 2.3 | 2.6 | 3.2 | 3.9 | na | na |
| Low | 0.0 | 0.8 | -0.4 | 0.4 | 1.1 | 1.1 | -5.6 | 0.9 | 1.7 | 0.9 | 1.6 | 1.3 | -0.1 | -0.9 | 1.6 | 1.1 | na | na |
| Standard Deviation | 0.3 | 0.2 | 0.4 | 0.3 | 0.6 | 0.6 | 1.7 | 1.3 | 0.3 | 0.4 | 0.2 | 0.3 | 0.7 | 1.1 | 0.5 | 0.9 | na | na |
| Comparison Forecasts | | | | | | | | | | | | | | | | | | |
| IMF (Jan. '24) | 0.9 | 0.8 | | | | | | | | | | | | | | | | |
| OECD (Feb. '24) | 1.0 | 1.0 | | | | | | | 2.6 | 2.0 | | | | | | | | |

## Government and Background Data

**Prime Minister -** Mr. Fumio Kishida of the Liberal Democratic Party of Japan (LDP). **Parliament -** The LDP won 261 of the 465 seats of the Lower House of Parliament at the October 2021 elections and has formed a coalition with the minority party, Komeito Party. **Next Elections** House of Representatives (31 October, 2025). **Nominal GDP -** ¥556.8tn (2022). **Population -** 125.2mn (IMF, 2022). **Yen/$ Exchange Rate -** 130.99 (average, 2022).

**General Government Budget Balance – % of GDP**

*(fiscal years)*




*Historical data shown as averages for the periods. Source: Cabinet Office*

## Historical Data

| * % change on previous year | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|
| Gross Domestic Product* | -4.1 | 2.6 | 1.0 | 1.9 |
| Private Consumption* | -4.4 | 0.8 | 2.2 | 0.6 |
| Business Investment* | -4.9 | 0.5 | 1.9 | 2.1 |
| Industrial Production* | -10.9 | 5.8 | 0.0 | -1.4 |
| Consumer Prices* | 0.0 | -0.2 | 2.5 | 3.3 |
| Core-Core Consumer Prices* | 0.0 | -0.8 | 0.1 | 2.6 |
| Domestic Corp. Goods Prices* | -1.2 | 4.6 | 9.8 | 4.2 |
| Total Cash Earnings (nominal)' | -1.2 | 0.3 | 1.9 | 1.2 |
| New Car Registrations, mn | 2.48 | 2.40 | 2.22 | 2.65 |
| Housing Starts, mn | 0.82 | 0.86 | 0.86 | 0.82 |
| Unemployment Rate, % | 2.8 | 2.8 | 2.6 | 2.6 |
| Current Account, ¥tn | 15.8 | 21.4 | 10.0 | 21.0 |
| General Govt Budget Balance, SNA basis, fiscal years[1], ¥tn | -53.9 | -32.5 | -20.2 | -29.8 *e* |
| 3 mth TIBOR, % (end yr) | 0.1 | 0.1 | 0.1 | 0.1 |
| 10 Yr Govt Bond, % (end yr) | 0.0 | 0.1 | 0.4 | 0.6 |

*e = consensus estimate based on latest survey*

| Annual Total | | Year Average | | Annual Total | | Fiscal Years (Apr-Mar) | | Rates on Survey Date 0.3% | | Rates on Survey Date 0.8% | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Housing Starts (mn) | | Unemployment Rate (%) | | Current Account (¥tn) | | General Government Budget Balance (¥tn) | | 3 month Yen TIBOR Rate (%) | | 10 Year Govt Bond Yield (%) | |
| 新設住宅着工（百万戸） | | 失業率 | | 経常収支 | | 一般政府財政収支（SNA ベース、兆円） | | 3ヵ月物円建譲渡性預金 | | 10年物国債利回り | |
| 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | FY 24-25 | FY 25-26 | End Jul'24 | End Apr'25 | End Jul'24 | End Apr'25 |
| na | na | 2.5 | 2.6 | 16.3 | 17.0 | na | na | na | na | na | na |
| na | na | na | na | na | na | na | na | na | na | na | na |
| 0.79 | 0.75 | 2.3 | 2.2 | 23.7 | 17.9 | -13.7 | -15.0 | 0.2 | 0.5 | 1.1 | 1.3 |
| na | na | na | na | na | na | na | na | na | na | na | na |
| 0.83 | 0.87 | 2.5 | 2.5 | 25.7 | 25.8 | na | na | na | na | na | na |
| 0.81 | 0.83 | 2.5 | 2.4 | 21.0 | 18.7 | na | na | 0.3 | 0.4 | 0.8 | 0.8 |
| na | na | 2.4 | 2.1 | na | na | na | na | na | na | na | na |
| na | na | 2.5 | 2.4 | 22.7 | 20.3 | na | na | na | na | na | na |
| 0.82 | 0.82 | 2.4 | 2.2 | 22.9 | 25.4 | na | na | na | na | na | na |
| na | na | 2.5 | 2.4 | 16.8 | 14.3 | na | na | na | na | na | na |
| na | na | 2.4 | 2.2 | 28.9 | 32.5 | -36.3 | -28.4 | 0.3 | 0.6 | 1.0 | na |
| na | na | 2.4 | 2.3 | 28.1 | 28.8 | na | na | na | na | na | na |
| na | na | 2.4 | 2.2 | 33.0 | 35.0 | na | na | 0.2 | 0.4 | 0.8 | 0.9 |
| na | na | 2.5 | 2.5 | 19.4 | 21.3 | -27.6 | -13.2 | na | na | 0.8 | 0.6 |
| na | na | 2.4 | 2.2 | 20.5 | 17.3 | -24.9 | -24.1 | 0.2 | 0.3 | 0.7 | 0.8 |
| na | na | 2.5 | 2.5 | 23.7 | 24.8 | -24.3 | -14.4 | 0.1 | 0.3 | na | na |
| 0.83 | 0.84 | 2.4 | 2.4 | 24.0 | 24.0 | na | na | na | na | 0.9 | 1.2 |
| 0.79 | 0.78 | 2.4 | 2.3 | 21.2 | 19.1 | na | na | na | na | 0.9 | 1.2 |
| 0.81 | 0.81 | 2.5 | 2.3 | 24.2 | 22.5 | -17.7 | -17.8 | 0.2 | 0.3 | 0.9 | 1.1 |
| 0.83 | 0.85 | 2.5 | 2.4 | 20.7 | 18.3 | -26.4 | -22.5 | na | na | na | na |
| 0.82 | 0.83 | 2.6 | 2.5 | 20.2 | 22.2 | -19.3 | -18.3 | na | na | 1.2 | 1.1 |
| na | na | na | na | 24.8 | na | na | na | 0.2 | na | 1.0 | na |
| na | na | 2.5 | 2.4 | 28.1 | 29.2 | na | na | na | na | 1.0 | 1.1 |
| 0.81 | 0.82 | 2.4 | 2.4 | 23.3 | 22.9 | -23.8 | -19.2 | 0.2 | 0.4 | 0.9 | 1.0 |
| 0.81 | 0.82 | 2.5 | 2.4 | 23.4 | 23.2 | -23.1 | -20.7 | | | | |
| 0.82 | 0.83 | 2.5 | 2.4 | 23.0 | 21.6 | -20.2 | -18.8 | | | | |
| 0.83 | 0.87 | 2.6 | 2.6 | 33.0 | 35.0 | -13.7 | -13.2 | 0.3 | 0.6 | 1.2 | 1.3 |
| 0.79 | 0.75 | 2.3 | 2.1 | 16.3 | 14.3 | -36.3 | -28.4 | 0.1 | 0.3 | 0.7 | 0.6 |
| 0.02 | 0.04 | 0.1 | 0.1 | 4.1 | 5.6 | 6.9 | 5.3 | 0.1 | 0.1 | 0.1 | 0.2 |

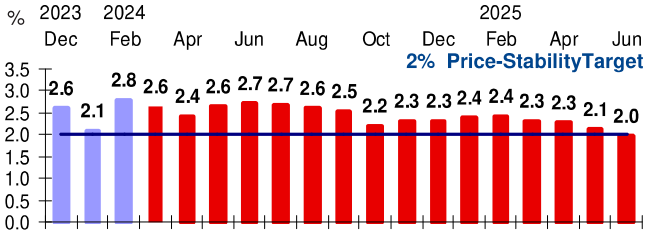
## BoJ Exits Negative Rates and Yield Curve Control

On March 19, the Bank of Japan (BoJ) lifted its overnight interest rate from -0.1% to the 0.0-0.1% range, ending an extended experiment in negative interest rate policy and unconventional easing like yield curve control, which capped the yield on 10-year government bonds, and ETF purchases. The short-term overnight rate will now be used to conduct monetary policy. The Japanese economy fell into a deflationary trap in the 1990s, with the aim of unconventional monetary policy back then to not just soak up significant levels of corporate and government debt, but also incentivise consumer and corporate lending. Results were mixed as economic growth stayed muted and deflation was a constant concern for the BoJ, but today, the inflation environment has changed, necessitating a pivot in policy. The CPI has eased from 2023 peaks, though, and the disinflation process is underway, even if the most recent February outturn for headline CPI accelerated by 2.8% (y-o-y) on the back of stronger services prices, compared with 2.2% in January. What also helped the BoJ in its long-awaited policy shift was a provisional 3.7% jump in base pay secured by Japan's largest trade union federation. The BoJ hopes this will set in motion a 'virtuous cycle' of wage growth/sustainable inflation, as policymakers would like domestic demand to drive price increases towards their 2% target rather than supply shocks. This may take time to effectuate.

Economic growth in H1 2023 received a fillip from financial market excitement and a tourism boom, but activity has since faltered. Services remain fairly robust, though, and retail sales in February jumped 4.6% (y-o-y). Moreover, capex is likely to be supported by greater infrastructure spending, especially in industry.

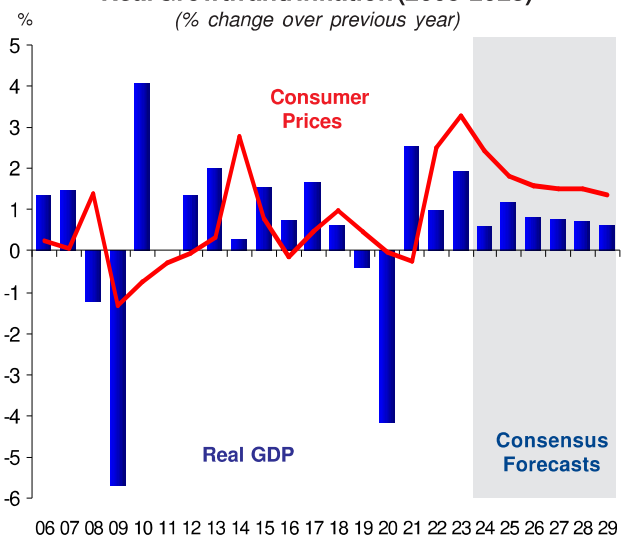
**Monthly CPI Outturns and y-o-y Consensus Forecasts**

*(% change on the same period of the previous year)*



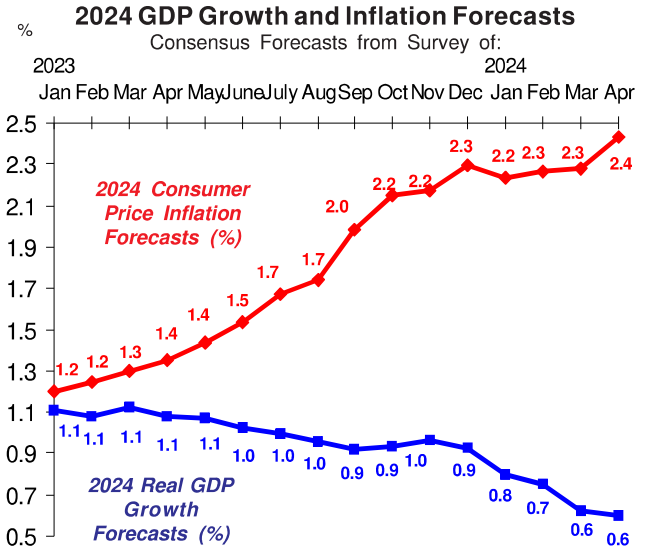

**Real Growth and Inflation (2005-2028)**

*(% change over previous year)*




**2024 GDP Growth and Inflation Forecasts**

Consensus Forecasts from Survey of:



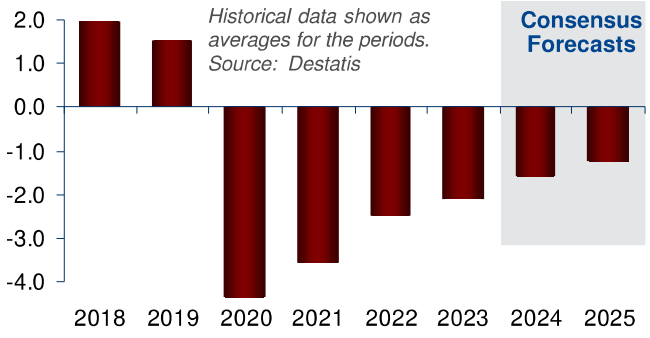
# GERMANY APRIL 2024

| | Average % Change on Previous Calendar Year | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gross Domestic Product | | Private Consumption | | Machinery & Equipment Investment | | Industrial Production | | Consumer Prices | | Producer Prices | | Negotiated Wages and Salaries – Production Sector | |
| | *Bruttoinlands-produkt* | | *Privater Verbrauch* | | *Ausrüstungs-investitionen* | | *Produktion im Produzierenden Gewerbe* | | *Preisindex für die Lebenshaltung* | | *Index für Erzeugerpreise* | | *Tariflohn- und -gehaltsniveau* | |
| Economic Forecasters | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 |
| Helaba Frankfurt | 0.8 | 1.0 | 1.0 | 1.3 | 2.0 | 1.0 | 0.5 | 2.0 | 3.0 | 2.5 | -0.5 | 2.0 | 5.2 | 3.0 |
| MM Warburg | 0.5 | 1.6 | 1.2 | 1.3 | -2.9 | 3.0 | -0.6 | 2.8 | 2.3 | 2.0 | -1.2 | 1.8 | 3.8 | 2.5 |
| DZ Bank | 0.5 | 1.6 | 0.9 | 1.6 | -1.9 | 1.3 | na | na | 2.3 | 2.3 | na | na | 4.5 | 3.0 |
| DWS | 0.4 | 1.3 | 1.0 | 1.3 | 0.0 | 2.8 | na | na | 2.6 | 2.3 | na | na | na | na |
| UniCredit | 0.4 | 1.3 | 0.6 | 1.2 | -0.7 | 1.9 | na | na | 2.4 | 1.7 | na | na | 3.5 | 2.8 |
| RWI Essen | 0.3 | 1.2 | 0.9 | 1.3 | -2.7 | 1.9 | na | na | 2.2 | 2.0 | na | na | na | na |
| BayernLB | 0.3 | 1.3 | 0.9 | 1.2 | 3.9 | 4.1 | na | na | 2.7 | 2.2 | na | na | na | na |
| Econ Intelligence Unit | 0.3 | 1.4 | 0.7 | 1.1 | 1.5 | 2.5 | -0.3 | 1.4 | 2.1 | 1.9 | -0.2 | 2.6 | na | na |
| LB Baden-Württemberg | 0.3 | 1.0 | 0.7 | 0.7 | -1.5 | 1.3 | -1.0 | 1.5 | 2.5 | 2.1 | -1.0 | 3.0 | 3.5 | 3.0 |
| DekaBank | 0.3 | 1.2 | 0.7 | 1.4 | -2.6 | 2.8 | -1.9 | 0.9 | 2.7 | 2.5 | na | na | 3.5 | 2.9 |
| UBS | 0.3 | 0.8 | 0.9 | 1.1 | na | na | -2.4 | 0.9 | na | na | na | na | na | na |
| HWWI | 0.2 | 1.0 | 0.8 | 1.2 | 0.0 | 2.8 | -2.0 | 1.5 | 2.3 | 2.2 | -1.5 | 2.2 | 4.3 | 3.5 |
| IFO - Munich Institute | 0.2 | 1.5 | 1.1 | 1.7 | -0.8 | 4.2 | na | na | 2.3 | 1.6 | na | na | na | na |
| IWH Halle Institute | 0.2 | 1.5 | 0.7 | 1.6 | 0.2 | 3.8 | -1.9 | 2.1 | 2.6 | 1.8 | na | na | 4.0 | 2.8 |
| Bloomberg Economics | 0.2 | 1.1 | 1.2 | 1.5 | -1.4 | 1.7 | na | na | 2.3 | 1.0 | na | na | 5.1 | 2.6 |
| Allianz | 0.1 | 0.9 | 1.5 | 0.5 | 2.6 | 4.2 | na | na | 2.5 | 2.2 | na | na | 3.9 | 3.0 |
| Bank Julius Baer | 0.1 | 2.0 | 1.3 | 3.0 | 0.1 | 2.9 | -1.4 | 2.3 | 2.2 | 2.0 | na | na | na | na |
| Morgan Stanley | 0.1 | 0.8 | 1.4 | 1.1 | na | na | na | na | 2.5 | 2.2 | na | na | na | na |
| S&P Global Market Intel | 0.1 | 1.3 | 1.2 | 1.9 | -2.6 | 7.6 | -1.4 | 4.1 | 2.6 | 2.0 | -2.4 | 0.1 | 6.0 | 4.0 |
| Kiel Institute | 0.1 | 1.2 | 1.0 | 1.2 | -1.3 | 1.3 | na | na | 2.3 | 1.7 | na | na | na | na |
| DIW - Berlin | 0.0 | 1.2 | 0.8 | 1.0 | -1.8 | 4.2 | -1.7 | 1.3 | 2.2 | 2.0 | 1.1 | 2.1 | 4.4 | 2.8 |
| Oxford Economics | 0.0 | 1.4 | 1.1 | 3.0 | 4.2 | 0.0 | -1.5 | 2.0 | na | na | -3.7 | -4.4 | 5.1 | 3.6 |
| Moody's Analytics | -0.1 | 1.4 | 0.5 | 1.4 | na | na | -3.3 | 3.1 | 2.2 | 2.0 | -1.3 | 2.0 | na | na |
| Citigroup | -0.2 | 0.4 | 0.9 | 1.5 | -1.9 | -0.3 | -2.4 | 2.5 | 2.1 | 2.0 | na | na | na | na |
| Bank of America - Merrill | -0.2 | 0.9 | 0.2 | 0.9 | na | na | -2.1 | 2.9 | 2.7 | 1.4 | na | na | na | na |
| Berliner Sparkasse | -0.2 | 1.0 | 1.0 | 1.6 | -4.0 | 1.8 | -2.8 | 0.4 | 2.3 | 2.3 | -1.7 | 2.9 | 4.0 | 2.6 |
| HSBC Trinkaus | -0.2 | 0.9 | 0.8 | 1.5 | na | na | -2.6 | 2.1 | 2.3 | 2.3 | na | na | na | na |
| Swiss Life Asset Mgrs | -0.2 | 1.0 | na | na | na | na | na | na | 2.4 | 1.9 | na | na | na | na |
| Capital Economics | -0.2 | 1.0 | 0.6 | 1.1 | na | na | na | na | 2.2 | 1.8 | na | na | na | na |
| FERI | -0.3 | 0.1 | 0.7 | 1.1 | 0.2 | 0.0 | -1.9 | 3.1 | 2.5 | 2.3 | -0.7 | 2.4 | 3.9 | 3.9 |
| Commerzbank | -0.3 | 0.5 | 0.9 | 1.6 | -3.1 | 1.3 | -3.0 | -1.1 | 2.7 | 2.8 | -2.2 | 1.4 | 3.7 | 3.4 |
| German Econ Inst (IW) | -0.3 | na | 1.0 | na | 0.0 | na | -2.0 | na | 2.9 | na | 0.0 | na | na | na |
| **Consensus (Mean)** | 0.1 | 1.1 | 0.9 | 1.4 | -0.6 | 2.4 | -1.8 | 1.9 | 2.4 | 2.0 | -1.2 | 1.5 | 4.3 | 3.1 |
| Last Month's Mean | 0.1 | 1.1 | 0.9 | 1.4 | -0.5 | 2.2 | -1.8 | 1.9 | 2.5 | 2.1 | -1.0 | 1.4 | 3.9 | 2.9 |
| 3 Months Ago | 0.3 | 1.2 | 0.8 | 1.4 | 0.5 | 2.5 | -1.0 | 1.8 | 2.5 | 2.1 | -0.2 | 2.1 | 4.1 | 2.9 |
| High | 0.8 | 2.0 | 1.5 | 3.0 | 4.2 | 7.6 | 0.5 | 4.1 | 3.0 | 2.8 | 1.1 | 3.0 | 6.0 | 4.0 |
| Low | -0.3 | 0.1 | 0.2 | 0.5 | -4.0 | -0.3 | -3.3 | -1.1 | 2.1 | 1.0 | -3.7 | -4.4 | 3.5 | 2.5 |
| Standard Deviation | 0.3 | 0.4 | 0.3 | 0.5 | 2.1 | 1.7 | 0.9 | 1.2 | 0.2 | 0.4 | 1.2 | 2.0 | 0.7 | 0.5 |
| **Comparison Forecasts** | | | | | | | | | | | | | | |
| Bundesbank (Dec. '23) | 0.4 | 1.2 | 1.4 | 1.8 | | | | | | | | | 5.3 | 3.0 |
| Government (Feb. '24) | 0.2 | | | | | | | | 2.8 | | | | | |
| Joint Econ F'cast (Mar. '24) | 0.1 | 1.4 | 0.9 | 1.3 | -1.8 | 3.3 | | | 2.3 | 1.8 | | | | |
| Eur Commission (Feb. '24) | 0.3 | 1.2 | | | | | | | | | | | | |

## Government and Background Data

**Chancellor -** Olaf Scholz (Social Democrats or SPD). **Parliament -** The September 26, 2021 election saw the SPD win the most seats (206) in the 709-seat Bundestag (lower house). A coalition government has been formed between the SPD, Greens and Free Democratic Party. **Next Elections -** 2025. **Nominal GDP -** Euro 3,858bn (2022). **Population -** 88.4mn (IMF, 2022). **$/Euro Exchange Rate -** 1.053 (average, 2022).

## General Government Budget Balance – % of GDP




## Historical Data

| * % change on previous year | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|
| **Gross Domestic Product*** | -3.8 | 3.2 | 1.8 | -0.3 |
| **Private Consumption*** | -5.9 | 1.5 | 3.9 | -0.7 |
| **Machinery & Eqpt Investment*** | -11.1 | 2.8 | 4.0 | 3.0 |
| **Industrial Production*** | -7.7 | 3.6 | -1.0 | -1.6 |
| **Consumer Prices*** | 0.5 | 3.1 | 6.9 | 5.9 |
| **Producer Prices*** | -1.0 | 10.5 | 32.9 | -2.4 |
| **Negotiated Wages & Salaries*** | 0.9 | 1.4 | 1.9 | 5.3 |
| **Unemployment Rate, %** | 5.9 | 5.7 | 5.3 | 5.7 |
| **Current Account, Euro bn** | 223 | 263 | 165 | 243 |
| **Budget Balance, net lending/borrowing, (ESA10, Maastrict), Euro bn** | -148 | -130 | -96.9 | -87.4 |
| **3 mth Euro, %** (end yr) | -0.5 | -0.6 | 2.1 | 3.9 |
| **10 Yr German Govt Bond, %** (end yr) | -0.6 | -0.2 | 2.6 | 2.0 |

| Year Average | | Annual Total | | | | Rates on Survey Date 3.9% | | 2.4% | |
|---|---|---|---|---|---|---|---|---|---|
| Unemployment Rate (%) | | Current Account (Euro bn) | | General Govt Budget Bal (Maastricht) (Euro bn) | | 3 month Euro Rate (%) | | 10 Year German Govt Bond Yield (%) | |
| *Arbeitslosenquote, % der Erwerbspers. insgesamt* | | *Leistungsbilanz (€ bn)* | | *Finanzierungssaldo des Staates (Maastricht) (€ bn)* | | *3 Monate Euro (%)* | | *Rendite von Bundesanleihen, 10 Jahre (%)* | |
| 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | End Jul'24 | End Apr'25 | End Jul'24 | End Apr'25 |
| 5.9 | 5.4 | 290 | 300 | -64.0 | -44.0 | 3.5 | 2.8 | 2.0 | 2.1 |
| 6.1 | 5.9 | 278 | 275 | -70.0 | -65.0 | 3.6 | 2.8 | 2.1 | 1.8 |
| 5.9 | 5.7 | na | na | -50.0 | -40.0 | na | na | na | na |
| 5.9 | 5.7 | na | na | na | na | na | na | na | na |
| 6.2 | 6.1 | na | na | -85.0 | -87.0 | na | na | na | na |
| 5.7 | 5.5 | 277 | 271 | na | na | 3.7 | 2.9 | 2.6 | 2.5 |
| 5.6 | 5.3 | 250 | 255 | -125.0 | -130.0 | 3.8 | 3.2 | 2.3 | 2.2 |
| na | na | 240 | 241 | -61.5 | -38.1 | 3.9 | 2.9 | 2.6 | 2.2 |
| 5.9 | 5.9 | 275 | 260 | -62.0 | -50.0 | 3.5 | 2.7 | 2.1 | 2.3 |
| 5.8 | 5.5 | 279 | 284 | -84.0 | -71.7 | 3.7 | 3.0 | 2.4 | 2.3 |
| na | na | 175 | 215 | na | na | na | na | na | na |
| 5.8 | 5.4 | 280 | 285 | -50.0 | -45.0 | 3.5 | 3.1 | 2.2 | 2.2 |
| 5.9 | 5.6 | 292 | 293 | -76.0 | -44.6 | 3.4 | 2.1 | 2.3 | 2.3 |
| 5.8 | 5.6 | 307 | 320 | -56.1 | -50.7 | 3.5 | 2.9 | 2.4 | 2.1 |
| na | na | na | na | na | na | na | na | na | na |
| 6.0 | 5.7 | 277 | 279 | na | na | 3.5 | 2.8 | 2.2 | 2.1 |
| 5.7 | 5.4 | na | na | na | na | 3.4 | 2.9 | 2.4 | 2.4 |
| na | na | 265 | 274 | na | na | na | na | na | na |
| na | na | 266 | 263 | -65.8 | -55.5 | 3.7 | 2.6 | 2.4 | 2.3 |
| na | na | 307 | 326 | na | na | na | na | na | na |
| 5.9 | 5.5 | 303 | 306 | -51.4 | -29.7 | 3.4 | 2.6 | 2.3 | 2.3 |
| 5.8 | 5.4 | 254 | 251 | -73.8 | -33.9 | 3.2 | 1.9 | 2.2 | 2.1 |
| 6.0 | 5.8 | 225 | 225 | -65.2 | -48.5 | na | na | na | na |
| 5.8 | 6.1 | 278 | 295 | -70.1 | -34.8 | na | na | 2.2 | 2.0 |
| na | na | na | na | na | na | na | na | na | na |
| 5.9 | 5.8 | 289 | 280 | -77.0 | -71.0 | na | na | na | na |
| 5.9 | 5.8 | na | na | na | na | na | na | na | na |
| 5.9 | 5.9 | na | na | na | na | 3.6 | 2.4 | 2.2 | 2.1 |
| na | na | 321 | 322 | -64.3 | -35.5 | na | na | na | na |
| 5.5 | 5.6 | 266 | 257 | -63.0 | -49.1 | 3.6 | 2.8 | 2.0 | 2.2 |
| 6.3 | 6.5 | 210 | 200 | -55.0 | -45.0 | 3.7 | 3.0 | 2.2 | 2.4 |
| 6.0 | na | na | na | -26.0 | na | 4.0 | na | 2.5 | na |
| 5.9 | 5.7 | 270 | 273 | -66.4 | -53.5 | 3.6 | 2.7 | 2.3 | 2.2 |
| 5.9 | 5.7 | 271 | 273 | -63.7 | -52.5 | | | | |
| 5.9 | 5.7 | 265 | 270 | -65.1 | -50.7 | | | | |
| 6.3 | 6.5 | 321 | 326 | -26.0 | -29.7 | 4.0 | 3.2 | 2.6 | 2.5 |
| 5.5 | 5.3 | 175 | 200 | -125.0 | -130.0 | 3.2 | 1.9 | 2.0 | 1.8 |
| 0.2 | 0.3 | 33 | 33 | 18.8 | 23.1 | 0.2 | 0.3 | 0.2 | 0.2 |
| 5.8 | 5.5 | | | | | | | | |
| 5.8 | 5.5 | 270 | 283 | -67.2 | -52.9 | 3.4 | 2.1 | 2.3 | 2.3 |

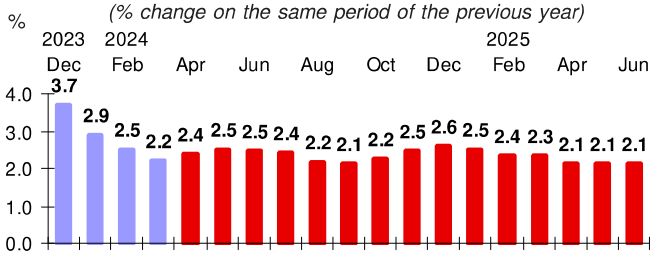
## Quashed Hopes for a Q1 Recovery

The domestic CPI eased by a larger-than-expected 2.2% (y-o-y) in March, down from 2.5% in February, leaving inflation at its smallest rate of increase since May 2021. The core CPI (excluding food & energy) also moderated, to 3.3%. Downside pressure came from energy prices, which fell by -2.7% (y-o-y), while food dropped -0.7%. However, the CPI was largely underpinned by a 3.7% (vs 3.4% in the previous month) rise in services inflation, likely due to Easter falling in March instead of April this year, as well as VAT for restaurants having been marked up from 7% to 19% in January. Moreover, some of the progress in disinflation may likely stem from weaker economic impetus. Going forward, household energy bills could see further declines in coming months as gas and electricity price drops are still being passed on to customers. This will provide some relief to households which saw their purchasing power tumble in recent years. So far, hopes of an economic recovery in Q1 boosted by a rebound in private consumption have faded after retail sales unexpectedly contracted -1.9% (m-o-m) in February, their steepest decline since October 2022. As soft industrial indicators weigh on activity (production managed 2.1% m-o-m in February, while new industrial orders continued to contract in y-o-y terms, even though they recovered on a m-o-m basis) and external demand is in the doldrums, the economy's trajectory in Q1 is looking weak, after contracting -0.3% in Q4.

The upper house of parliament approved a €3.2bn tax relief package aimed at bringing in new investment, particularly for construction. The Growth Opportunities Act was previously met with opposition from the federal states, as they would be the most affected by the shortfall in tax revenues, but this, coupled with soon-to-be-cuts in ECB policy rates, may help the poorly-performing construction sector.

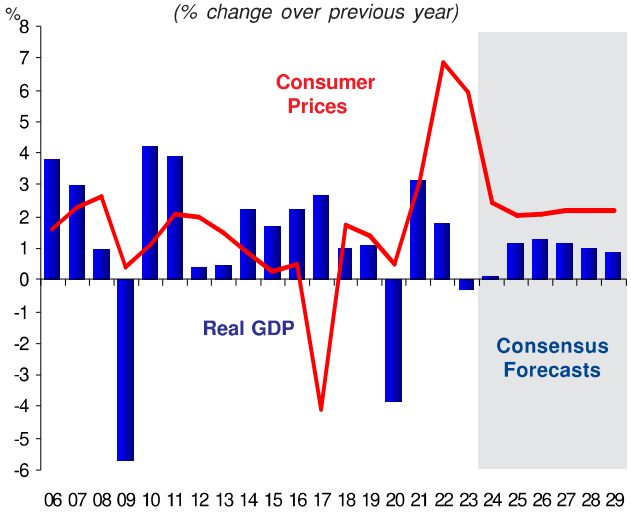
**Monthly CPI Outturns and y-o-y Consensus Forecasts**

*(% change on the same period of the previous year)*



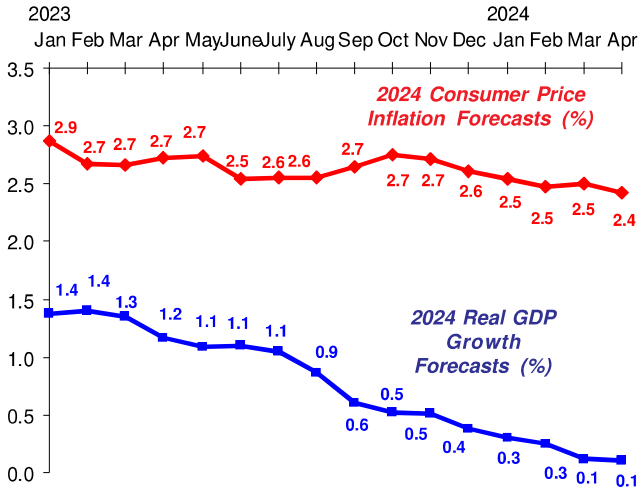

**Real Growth and Inflation (2005-2028)**

*(% change over previous year)*




**2024 GDP Growth and Inflation Forecasts**

Consensus Forecasts from Survey of:



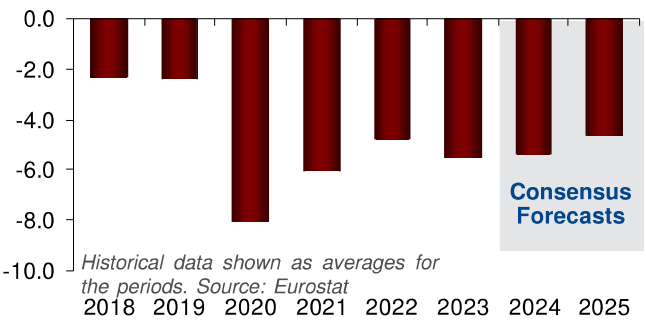
# FRANCE APRIL 2024

| | Average % Change on Previous Calendar Year | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gross Domestic Product | | Household Consumption | | Business Investment | | Manufacturing Production | | Consumer Prices (INSEE) | | Hourly Wage Rates | |
| | *Produit Intérieur Brut* | | *Consommation des Ménages* | | *Investissements des Entreprises* | | *Production Manufacturière* | | *Prix à la Consommation (INSEE)* | | *Taux de Salaire Horaire* | |
| Economic Forecasters | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 |
| Natixis | 1.1 | 1.4 | 1.3 | 1.6 | 1.2 | 2.5 | na | na | 2.3 | 1.8 | na | na |
| Goldman Sachs | 0.9 | 1.3 | 2.5 | 1.8 | na | na | na | na | 2.4 | 2.1 | na | na |
| Credit Agricole | 0.9 | 1.3 | 1.3 | 1.4 | -0.9 | 1.6 | 1.1 | 1.4 | 2.5 | 2.1 | na | na |
| Econ Intelligence Unit | 0.9 | 1.4 | 0.9 | 1.7 | na | na | 1.0 | 2.0 | 2.7 | 2.1 | na | na |
| Bloomberg Economics | 0.8 | 1.6 | 1.4 | 1.9 | 0.1 | 1.5 | na | na | 2.3 | 1.9 | 3.4 | 2.7 |
| S&P Global Ratings | 0.8 | 1.4 | 0.9 | 1.4 | na | na | na | na | 2.7 | 2.0 | na | na |
| Fitch Ratings | 0.8 | 1.5 | 0.9 | 1.5 | na | na | na | na | 2.7 | 2.3 | na | na |
| UBS | 0.8 | 1.2 | 1.3 | 1.3 | 0.2 | 2.0 | 0.8 | 1.2 | na | na | na | na |
| BIPE - BDO Advisory | 0.8 | 1.4 | 1.1 | 1.4 | -1.2 | 1.6 | na | na | 2.6 | 1.7 | na | na |
| UniCredit | 0.8 | 1.1 | 0.9 | 1.3 | -0.5 | 1.3 | na | na | 2.6 | 1.9 | na | na |
| Moody's Analytics | 0.8 | 1.5 | 1.2 | 1.9 | na | na | 0.6 | 2.4 | 2.3 | 1.6 | na | na |
| Bank of America - Merrill | 0.7 | 1.3 | 1.0 | 1.6 | na | na | na | na | 2.9 | 2.0 | na | na |
| BNP Paribas | 0.7 | 1.4 | 0.9 | 1.2 | -0.7 | 1.1 | -0.5 | 1.0 | 2.3 | 1.6 | 2.7 | 1.4 |
| HSBC | 0.7 | 1.3 | 0.9 | 1.2 | -0.3 | 2.1 | -0.1 | 0.6 | 2.3 | 2.0 | 2.9 | 2.3 |
| Swiss Life Asset Mgrs | 0.7 | 1.0 | 0.8 | 0.9 | 0.6 | 1.6 | na | na | 2.2 | 1.7 | na | na |
| S&P Global Market Intel | 0.6 | 1.3 | 0.8 | 1.5 | -1.5 | 1.3 | 0.2 | 1.4 | 2.9 | 1.8 | na | na |
| PAIR Conseil | 0.6 | 1.3 | 0.7 | 1.7 | -1.1 | 1.0 | na | na | 2.2 | 1.9 | 2.7 | 2.4 |
| Citigroup | 0.6 | 1.2 | 0.8 | 1.1 | 0.4 | 2.3 | 0.7 | 2.4 | 2.9 | 2.0 | 3.5 | 4.0 |
| Capital Economics | 0.5 | 1.0 | 0.8 | 1.1 | na | na | na | na | 2.7 | 1.8 | na | na |
| Oddo BHF | 0.5 | 1.2 | 0.8 | 1.4 | -0.6 | 1.6 | 0.4 | 1.6 | 2.2 | 1.5 | 2.2 | 1.7 |
| OFCE | 0.5 | 1.3 | 0.9 | 1.7 | -1.9 | 0.6 | na | na | 2.3 | 2.1 | na | na |
| Societe Generale | 0.5 | 0.7 | 0.8 | 0.9 | 0.7 | 1.4 | na | na | na | na | na | na |
| Oxford Economics | 0.5 | 2.0 | 1.0 | 1.5 | -0.8 | 1.6 | 0.7 | 2.6 | 2.5 | 1.2 | 4.0 | 3.1 |
| AXA Investment Managers | 0.4 | 0.7 | 0.9 | 1.3 | na | na | na | na | na | na | na | na |
| GAMA - Paris-Nanterre Univ | 0.4 | 0.9 | 0.6 | 0.9 | 1.0 | 2.0 | na | na | 2.8 | 2.2 | na | na |
| Rexecode | 0.4 | 1.2 | 0.9 | 1.4 | -1.7 | 0.4 | na | na | 2.5 | 2.4 | 3.0 | 3.0 |
| **Consensus (Mean)** | 0.7 | 1.3 | 1.0 | 1.4 | -0.4 | 1.5 | 0.5 | 1.7 | 2.5 | 1.9 | 3.0 | 2.6 |
| Last Month's Mean | 0.7 | 1.3 | 1.0 | 1.4 | -0.1 | 1.6 | 0.4 | 1.6 | 2.5 | 1.9 | 3.2 | 2.6 |
| 3 Months Ago | 0.7 | 1.3 | 1.1 | 1.4 | 0.4 | 1.4 | 0.7 | 1.5 | 2.5 | 1.9 | 3.2 | 2.7 |
| High | 1.1 | 2.0 | 2.5 | 1.9 | 1.2 | 2.5 | 1.1 | 2.6 | 2.9 | 2.4 | 4.0 | 4.0 |
| Low | 0.4 | 0.7 | 0.6 | 0.9 | -1.9 | 0.4 | -0.5 | 0.6 | 2.2 | 1.2 | 2.2 | 1.4 |
| Standard Deviation | 0.2 | 0.3 | 0.4 | 0.3 | 0.9 | 0.5 | 0.5 | 0.7 | 0.2 | 0.3 | 0.6 | 0.8 |
| Comparison Forecasts | | | | | | | | | | | | |
| Government (Feb. '24) | 1.0 | | | | | | | | | | | |
| Eur Commission (Feb. '24) | 0.9 | 1.3 | | | | | | | | | | |
| IMF (Jan. '24) | 1.0 | 1.7 | | | | | | | | | | |
| OECD (Feb. '24) | 0.6 | 1.2 | | | | | | | 2.7 | 2.1 | | |

## Government and Background Data

**President -** Mr. Emmanuel Macron (LREM). **Prime Minister -** Mr. Gabriel Attal (LREM). **Parliament -** Mr. Macron's centrist *La République en Marche* (LREM) party currently has 271 out of the 577 seats in the National Assembly. **Next Elections -** Legislative and presidential: 2027. **Nominal GDP -** Euro2,638bn (2022). **Population -** 65.6mn (IMF, 2022). **$/Euro Exchange Rate -** 1.053 (average, 2022).

## General Government Budget Balance – % of GDP




*Historical data shown as averages for the periods. Source: Eurostat*

## Historical Data

| * % change on previous year | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|
| Gross Domestic Product* | -7.7 | 6.4 | 2.5 | 0.9 |
| Household Consumption* | -6.7 | 5.1 | 2.1 | 0.6 |
| Business Investment* | -5.7 | 9.8 | 3.8 | 2.7 |
| Manufacturing Production* | -11.7 | 5.4 | 1.7 | 0.7 |
| Consumer Prices (INSEE)* | 0.5 | 1.6 | 5.2 | 4.9 |
| Hourly Wage Rates* | 1.8 | 1.4 | 3.7 | 4.7 |
| Unemployment Rate (ILO), % | 7.9 | 7.7 | 7.1 | 7.1 |
| Current Account, Euro bn | -37.5 | 9.8 | -52.7 | -33.8 |
| General Govt. Budget Balance (Maastricht definition), Euro bn | -207 | -165 | -126 | -154 |
| 3 mth Euro, % (end yr) | -0.5 | -0.6 | 2.1 | 3.9 |
| 10 Yr French Go % (end yr) | -0.3 | 0.2 | 3.1 | 2.6 |

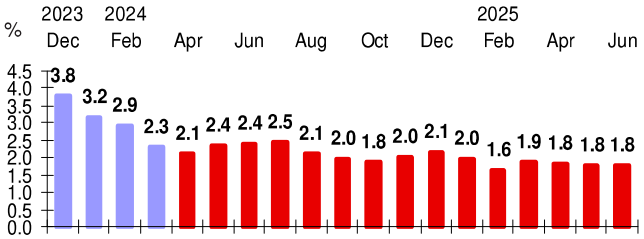
| Year Average | | Annual Total | | | | Rates on Survey Date 3.9% | | | 2.9% |
|---|---|---|---|---|---|---|---|---|---|
| Unemployment Rate, ILO (%) | | Current Account (Euro bn) | | General Govt Budget Balance (Maastricht) (Euro bn) | | 3 month Euro Rate (%) | | 10 Year French Govt Bond Yield (%) | |
| *Taux de Chômage, BIT (%)* | | *Solde Courant (€ md)* | | *Balance Budgétaire (Maastricht) (€ md)* | | *Taux d'intéret 3 mois Euro (%)* | | *Rendement des obligations d'Etat, 10 ans (%)* | |
| 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | End Jul'24 | End Apr'25 | End Jul'24 | End Apr'25 |
| 7.5 | na | na | na | -136.0 | -118.0 | na | na | na | na |
| 7.3 | 7.3 | na | na | -129.4 | -115.7 | na | na | na | na |
| 7.6 | 7.5 | na | na | -139.5 | -128.0 | na | na | na | na |
| 7.4 | 7.2 | -20.0 | -20.7 | -145.3 | -127.0 | 3.9 | 2.9 | 3.2 | 3.0 |
| 7.6 | 7.4 | na | na | na | na | na | na | na | na |
| 7.8 | 7.7 | na | na | na | na | na | na | na | na |
| 7.6 | 7.5 | na | na | -149.7 | -134.5 | na | na | na | na |
| 7.4 | 7.5 | -44.4 | -29.4 | na | na | na | na | na | na |
| 7.4 | 7.8 | na | na | na | na | na | na | na | na |
| 7.4 | 7.3 | na | na | -130.0 | -117.0 | na | na | na | na |
| 7.7 | 7.7 | -46.4 | -38.2 | -126.6 | -113.4 | na | na | na | na |
| na | na | -7.0 | -12.4 | na | na | na | na | na | na |
| 7.7 | 7.9 | -15.0 | -25.0 | na | na | na | na | na | na |
| 7.6 | 7.8 | -14.5 | -16.5 | -132.2 | -118.6 | na | na | 2.4 | 2.2 |
| 7.5 | 7.6 | na | na | na | na | 3.6 | 2.4 | 2.7 | 2.7 |
| 7.5 | 7.6 | -27.6 | -20.8 | -150.1 | -124.2 | 3.7 | 2.6 | 2.8 | 2.8 |
| 7.5 | 7.8 | na | na | -159.6 | -164.4 | 3.6 | 3.4 | 2.7 | 2.7 |
| 7.4 | 7.4 | -38.6 | -41.4 | -150.5 | -137.8 | na | na | 2.6 | 2.4 |
| 7.7 | 7.8 | -29.0 | -22.4 | -144.9 | -143.3 | na | na | na | na |
| 7.5 | 7.7 | -14.7 | -17.2 | -144.6 | -133.9 | 3.8 | 2.8 | 3.0 | 2.8 |
| 7.7 | 8.4 | na | na | -148.0 | -119.0 | 3.9 | 3.2 | 2.8 | 2.5 |
| 8.0 | 8.3 | -20.3 | -17.9 | -150.0 | -151.9 | 3.1 | 2.1 | 2.8 | 2.3 |
| 7.3 | 7.1 | -51.0 | -51.9 | -129.5 | -130.7 | 3.2 | 1.9 | 2.7 | 2.5 |
| 7.3 | 7.5 | na | na | na | na | na | na | na | na |
| na | na | na | na | na | na | 3.6 | 3.0 | 2.7 | 2.5 |
| 7.6 | 7.8 | -16.0 | -22.0 | -148.0 | -142.0 | 3.6 | 2.5 | 2.8 | 2.9 |
| 7.5 | 7.6 | -26.5 | -25.8 | -142.0 | -130.6 | 3.6 | 2.7 | 2.8 | 2.6 |
| 7.5 | 7.5 | -29.4 | -27.9 | -134.2 | -124.2 | | | | |
| 7.5 | 7.5 | -30.3 | -27.1 | -133.7 | -124.5 | | | | |
| 8.0 | 8.4 | -7.0 | -12.4 | -126.6 | -113.4 | 3.9 | 3.4 | 3.2 | 3.0 |
| 7.3 | 7.1 | -51.0 | -51.9 | -159.6 | -164.4 | 3.1 | 1.9 | 2.4 | 2.2 |
| 0.2 | 0.3 | 14.3 | 11.5 | 9.7 | 14.1 | 0.2 | 0.5 | 0.2 | 0.2 |

## Worsening Budget Deficit Dominates Headlines

Statistics office INSEE announced that the budget deficit amounted to -5.5% of GDP in 2023, compared with -4.8% in 2022. This is considerably larger than the government's initial target of -4.9% of GDP, and is partly attributed to a €21bn slump in tax revenues. The fact that inflation, which helps revenues, was slowing last year, did not help. Moreover, weak growth in H2 2023 (GDP growth stalled q-o-q in Q3 and rose only +0.1% in Q4) contributed to the larger deficit. The unexpectedly poor outturn puts in jeopardy the government's -4.4% budget target for 2024, and indeed erodes the government's overarching pledge to bring public finances down to sustainable levels over the medium-term. Prime Minister Gabriel Attal announced that the government still plans on bringing the deficit to below -3% of GDP by 2027, although credit rating agencies like Moody's believe that hitting the -2.7% target by then looks unlikely. The government has announced spending cuts this year and next to meet targets, but even with some reductions in spending (including a possible reform to long-term unemployment benefits), some observers also perceive revenue and growth projections as somewhat optimistic. The state's initially-upbeat growth forecast of +1.4% for 2024 has since been revised down to 1%, though. Meanwhile, the Banque de France expects activity to grow by +0.8% in 2024, while our panel predicts a 0.7% rate. State spending also has to handle growing public pension needs, subsidising the green transition and likely-greater defence spending over the medium-term. Our panel's budget forecasts have risen.

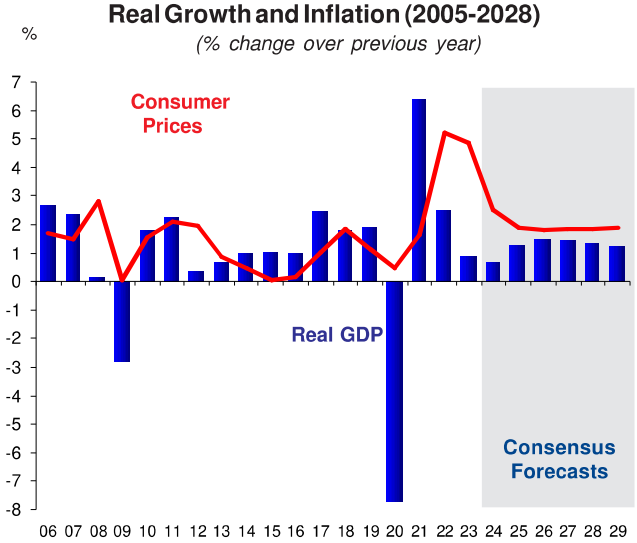
The manufacturing PMI remained in contraction in March, underpinned by a fall in new orders. However, industry is showing signs of recovery: February manufacturing production rose +0.9% (m-o-m), after falling -1.5% in January.

**Monthly CPI Outturns (INSEE) and y-o-y Consensus Forecasts** *(% change on the same period of the previous year)*



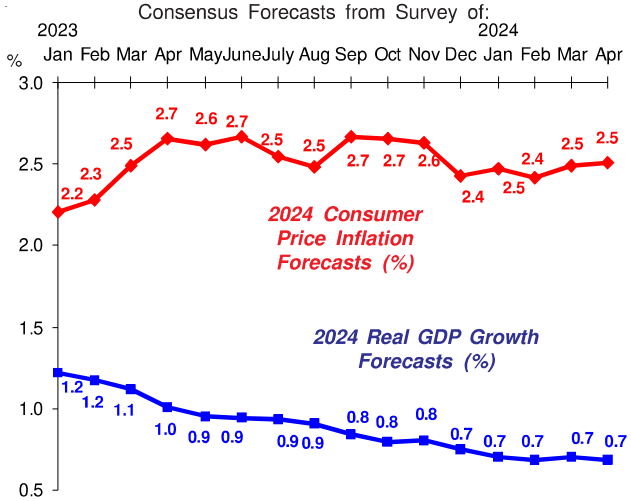

**Real Growth and Inflation (2005-2028)**

*(% change over previous year)*




**2024 GDP Growth and Inflation Forecasts**

Consensus Forecasts from Survey of:



# UNITED KINGDOM

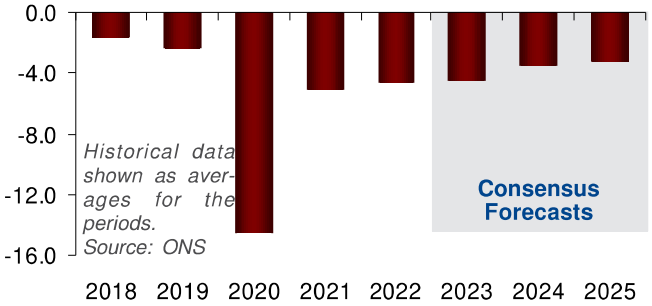
**APRIL 2024**

| | Average % Change on Previous Calendar Year | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gross Domestic Product | | Household Consump-tion | | Gross Fixed Investment | | Company Trading Profits | | Manufactur-ing Produc-tion | | Retail Prices (RPI-X, underly-ing rate) | | Consumer Prices Index | | Output Prices | | Average Weekly Earnings | |
| Economic Forecasters | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 |
| Liverpool Macro Research | 0.9 | 1.9 | 1.3 | 2.4 | na | na | na | na | na | na | 5.5 | 2.8 | 3.5 | 2.0 | na | na | 4.2 | 3.4 |
| Confed of British Industry | 0.8 | 1.6 | 0.4 | 1.3 | -4.2 | 0.7 | na | na | na | na | 4.1 | 2.4 | 2.9 | 2.1 | na | na | 5.6 | 3.2 |
| TS Lombard | 0.7 | 1.0 | 0.3 | 0.5 | 0.8 | 0.9 | na | na | na | na | na | na | 2.6 | 2.3 | na | na | na | na |
| Oxford Economics | 0.5 | 2.0 | 0.9 | 2.6 | -2.8 | 1.1 | 0.8 | 5.2 | 0.7 | 0.8 | 3.5 | 3.1 | 2.1 | 2.1 | 0.7 | 0.3 | 4.0 | 2.9 |
| Capital Economics | 0.5 | 1.5 | 0.4 | 1.7 | -2.3 | 2.0 | na | na | na | na | 2.0 | 1.8 | 1.4 | 0.9 | na | na | 4.0 | 2.5 |
| Societe Generale CIB | 0.5 | 1.3 | 0.4 | 1.4 | 1.0 | 2.0 | na | na | na | na | na | na | 1.9 | 1.7 | na | na | 3.6 | 2.9 |
| Deutsche Bank | 0.5 | 1.5 | 0.2 | 1.3 | -0.4 | 1.7 | na | na | na | na | na | na | 2.3 | 1.9 | na | na | na | na |
| Experian | 0.4 | 1.3 | 0.5 | 1.6 | -1.7 | 0.1 | na | na | -1.2 | -0.5 | 2.8 | 2.8 | 2.3 | 2.3 | na | na | 3.5 | 3.1 |
| Goldman Sachs | 0.4 | 1.4 | 1.4 | 1.4 | -2.2 | 1.8 | na | na | na | na | na | na | 2.1 | 1.7 | na | na | na | na |
| Allianz | 0.4 | 1.5 | 0.7 | 1.5 | na | na | na | na | na | na | na | na | 2.6 | 2.2 | na | na | 5.3 | 3.8 |
| Econ Intelligence Unit | 0.4 | 1.3 | 0.4 | 1.6 | -0.5 | 2.2 | na | na | na | na | na | na | 2.6 | 2.0 | 0.9 | 1.6 | 3.4 | 2.7 |
| HSBC | 0.4 | 1.1 | 0.1 | 1.2 | 0.5 | 1.8 | na | na | 0.9 | 1.3 | na | na | 2.2 | 2.3 | na | na | 4.0 | 3.9 |
| KPMG | 0.4 | 0.9 | 0.5 | 1.5 | -0.5 | 0.3 | na | na | na | na | na | na | 2.0 | 1.9 | na | na | na | na |
| Moody's Analytics | 0.4 | 0.9 | na | na | na | na | na | na | -0.3 | -0.3 | 3.0 | 2.6 | 2.5 | 2.5 | 1.8 | 2.5 | 5.4 | 4.5 |
| S&P Global Ratings | 0.3 | 1.4 | 0.4 | 1.5 | -1.0 | 1.7 | na | na | na | na | na | na | 3.0 | 2.3 | na | na | na | na |
| Heteronomics | 0.3 | 1.2 | 1.3 | 2.5 | -1.7 | -0.1 | na | na | na | na | 3.2 | 4.3 | 2.7 | 3.2 | 1.6 | 1.8 | 3.6 | 3.2 |
| Bank of America - Merrill | 0.3 | 0.8 | -0.2 | 0.7 | 0.0 | -0.4 | na | na | 1.0 | -3.3 | 4.6 | 3.6 | 2.4 | 2.3 | na | na | na | na |
| S&P Global Mkt Intelligence | 0.2 | 1.1 | 0.2 | 1.0 | 0.7 | 2.0 | na | na | na | na | na | na | 2.5 | 2.3 | na | na | na | na |
| Fitch Ratings | 0.2 | 1.7 | 0.1 | 1.5 | 0.2 | 1.8 | na | na | na | na | na | na | 2.6 | 2.4 | na | na | na | na |
| UBS | 0.2 | 1.5 | 0.3 | 1.8 | 0.6 | 1.7 | na | na | na | na | na | na | 2.3 | 2.0 | na | na | 3.1 | 2.5 |
| Swiss Life Asset Mgrs | 0.1 | 1.0 | na | na | na | na | na | na | na | na | na | na | 3.0 | 2.4 | na | na | na | na |
| Citigroup | 0.1 | -0.1 | 0.7 | -0.7 | -1.2 | -0.4 | -9.7 | -0.1 | na | na | 2.0 | 2.8 | 2.4 | 2.1 | na | na | 3.9 | 1.9 |
| NatWest Markets | 0.0 | 0.9 | 0.3 | 0.9 | -1.8 | -0.6 | na | na | -0.3 | 0.4 | 2.9 | 2.3 | 2.1 | 1.7 | 1.7 | 1.9 | 4.7 | 2.8 |
| Beacon Econ Forecasting | -0.1 | 1.5 | 0.0 | 2.0 | -2.9 | -0.3 | na | na | -0.2 | 0.0 | 3.0 | 2.8 | 2.9 | 2.8 | 1.7 | 1.2 | 4.8 | 4.0 |
| Nomura | -0.2 | 1.0 | -0.3 | 0.7 | -0.3 | 1.7 | na | na | na | na | na | na | 2.0 | 2.1 | na | na | 3.4 | 3.0 |
| Schroders | -0.2 | 1.0 | -0.7 | 0.7 | -1.0 | 0.7 | na | na | na | na | na | na | 2.4 | 2.8 | na | na | 3.8 | 4.6 |
| Economic Perspectives | -1.4 | -0.9 | -0.8 | -0.7 | -1.2 | -1.6 | -6.5 | 3.5 | -0.8 | -1.2 | 4.2 | 5.3 | 3.3 | 4.1 | 2.5 | 3.2 | 6.3 | 5.5 |
| **Consensus (Mean)** | 0.3 | 1.2 | 0.4 | 1.3 | -1.0 | 0.9 | -5.1 | 2.9 | 0.0 | -0.4 | 3.4 | 3.1 | 2.5 | 2.2 | 1.6 | 1.8 | 4.3 | 3.4 |
| Last Month's Mean | 0.2 | 1.1 | 0.4 | 1.3 | -1.3 | 1.0 | -3.0 | 2.6 | -0.3 | 0.1 | 3.3 | 3.1 | 2.5 | 2.2 | 1.4 | 1.7 | 4.3 | 3.4 |
| 3 Months Ago | 0.2 | 1.0 | 0.2 | 1.1 | -2.1 | 1.1 | -7.5 | 1.1 | -0.2 | -0.3 | 3.5 | 2.9 | 2.6 | 2.2 | 1.2 | 1.6 | 4.6 | 3.3 |
| High | 0.9 | 2.0 | 1.4 | 2.6 | 1.0 | 2.2 | 0.8 | 5.2 | 1.0 | 1.3 | 5.5 | 5.3 | 3.5 | 4.1 | 2.5 | 3.2 | 6.3 | 5.5 |
| Low | -1.4 | -0.9 | -0.8 | -0.7 | -4.2 | -1.6 | -9.7 | -0.1 | -1.2 | -3.3 | 2.0 | 1.8 | 1.4 | 0.9 | 0.7 | 0.3 | 3.1 | 1.9 |
| Standard Deviation | 0.4 | 0.6 | 0.5 | 0.8 | 1.4 | 1.1 | 5.4 | 2.7 | 0.8 | 1.4 | 1.0 | 1.0 | 0.4 | 0.6 | 0.6 | 0.9 | 0.9 | 0.9 |
| Comparison Forecasts | | | | | | | | | | | | | | | | | | |
| OBR - Treasury (Mar. '24) | 0.8 | 1.9 | 0.7 | 2.0 | -4.5 | 0.4 | | | | | 3.1 | 2.0 | 2.2 | 1.5 | | | 3.9 | 2.8 |
| IMF (Jan. '24) | 0.6 | 1.6 | | | | | | | | | | | | | | | | |
| OECD (Feb. '24) | 0.7 | 1.2 | | | | | | | | | | | 2.8 | 2.4 | | | | |

## Government and Background Data

**Prime Minister -** Mr. Rishi Sunak (Conservative Party). **Parliament -** The Conservative party won 365 seats in the 650-seat House of Commons (lower house), in the December 2019 general election. **Next Election -** Likely Date: before December 2024 (general election). **Nominal GDP -** £2,491bn (2022). **Population -** 65.6mn (IMF, 2022). **$/£ Exchange Rate -** 1.235 (average, 2022).

**Public Sector Net Borrowing – % of GDP**
*(fiscal years)*




## Historical Data

| * % change on previous year | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|
| **Gross Domestic Product*** | -10.4 | 8.7 | 4.3 | 0.1 |
| **Household Consumption*** | -13.0 | 7.5 | 4.8 | 0.2 |
| **Gross Fixed Investment*** | -10.8 | 7.4 | 8.0 | 2.2 |
| **Company Trading Profits*** | -0.1 | 5.0 | 9.6 | 1.5 |
| **Manufacturing Production*** | 2.3 | 1.5 | -3.3 | 1.2 |
| **Retail Prices** (RPI-X, underlying rate)* | 1.7 | 4.2 | 11.5 | 8.6 |
| **Consumer Price Index*** | 0.9 | 2.6 | 9.1 | 7.3 |
| **Output Prices*** | -1.0 | 5.2 | 16.0 | 3.2 |
| **Average Weekly Earnings*** | 1.8 | 5.9 | 6.1 | 7.1 |
| **Unemployment Rate** (LFS), **%** | 4.7 | 4.6 | 3.9 | 4.0 |
| **Current Account, £ bn** | -60.4 | -10.8 | -77.2 | -88.5 |
| **Public Sector Net Borrowing** (excl. financial interventions) | | | | |
| **fiscal years, £ bn** | 305.3 | 117.4 | 116.4 | 118.7 *e* |
| **3 mth Interbank, %** (end yr) | 0.0 | 0.3 | 3.8 | 5.2 |
| **10 Yr Gilt Yield, %** (end yr) | 0.2 | 1.0 | 3.7 | 3.5 |

*e = consensus estimate based on latest survey*

| Year Average | | Annual Total | | Fiscal Years (Apr-Mar) | | Rates on Survey Date 5.2% | | 4.1% | |
|---|---|---|---|---|---|---|---|---|---|
| Unemployment Rate (%) (Labour Force Survey) | | Current Account (£ bn) | | Public Sector Net Borrowing (£ bn) | | 3 month SONIA Rate (%) | | 10 Year Gilt Yield (%) | |
| 2024 | 2025 | 2024 | 2025 | FY 24-25 | FY 25-26 | End Jul'24 | End Apr'25 | End Jul'24 | End Apr'25 |
| na | na | -14.7 | 1.5 | 42.3 | 29.9 | 5.0 | 3.0 | na | na |
| 4.7 | 4.9 | -43.7 | -42.3 | 125.8 | 98.8 | na | na | na | na |
| na | na | na | na | na | na | na | na | na | na |
| 4.0 | 3.9 | -81.9 | -84.2 | 96.1 | 86.2 | 5.0 | 4.3 | 3.9 | 3.7 |
| 4.2 | 4.2 | -74.7 | -80.4 | 85.3 | 65.1 | 4.5 | 3.0 | 3.8 | 3.3 |
| 4.0 | 4.5 | -84.2 | -87.0 | 96.4 | 97.3 | na | na | na | na |
| 4.6 | 4.3 | na | na | na | na | na | na | na | na |
| 4.5 | 4.5 | -60.0 | -50.0 | 101.0 | 94.0 | na | na | na | na |
| 4.5 | 4.6 | na | na | na | na | na | na | na | na |
| 4.4 | 4.3 | na | na | na | na | na | na | na | na |
| 3.9 | 4.0 | -76.8 | -80.4 | na | na | 5.1 | 4.8 | 3.9 | 3.8 |
| 4.3 | 4.7 | na | na | na | na | na | na | na | na |
| 4.2 | 4.5 | -77.6 | -72.7 | 84.7 | 74.9 | 4.7 | 3.4 | 3.5 | 3.4 |
| 4.0 | 4.1 | -55.0 | -66.4 | na | na | na | na | na | na |
| 4.3 | 4.3 | na | na | na | na | na | na | na | na |
| 4.2 | 4.1 | na | na | na | na | 5.2 | 4.9 | na | na |
| na | na | na | na | na | na | na | na | na | na |
| 4.4 | 5.0 | -45.2 | -32.6 | na | na | 5.0 | 3.8 | 4.0 | 3.9 |
| 4.3 | 4.0 | na | na | na | na | 5.3 | 4.6 | 4.2 | 4.0 |
| 4.2 | 4.1 | -65.5 | -61.6 | na | na | na | na | na | na |
| na | na | na | na | na | na | na | na | na | na |
| 4.5 | 5.6 | -67.2 | -58.0 | 91.7 | 87.6 | 5.0 | 2.3 | na | na |
| 4.1 | 4.4 | -75.0 | -71.0 | 93.0 | 84.0 | 5.0 | 3.9 | 4.0 | 3.9 |
| 4.1 | 4.7 | -89.7 | -79.9 | 150.5 | 180.7 | 5.0 | 4.6 | 4.1 | 4.2 |
| 4.1 | 4.2 | na | na | na | na | na | na | 4.0 | 4.0 |
| 4.2 | 4.4 | na | na | 98.0 | 112.0 | 4.7 | 4.2 | 3.8 | 3.6 |
| 4.6 | 5.3 | -75.0 | -60.0 | 105.0 | 95.0 | 5.0 | 4.5 | 4.3 | 4.6 |
| 4.3 | 4.5 | -65.7 | -61.7 | 97.5 | 92.1 | 5.0 | 3.9 | 4.0 | 3.8 |
| 4.4 | 4.5 | -68.6 | -66.0 | 97.2 | 91.2 | | | | |
| 4.7 | 4.8 | -58.1 | -53.2 | 104.2 | 93.7 | | | | |
| 4.7 | 5.6 | -14.7 | 1.5 | 150.5 | 180.7 | 5.3 | 4.9 | 4.3 | 4.6 |
| 3.9 | 3.9 | -89.7 | -87.0 | 42.3 | 29.9 | 4.5 | 2.3 | 3.5 | 3.3 |
| 0.2 | 0.4 | 19.6 | 23.6 | 25.4 | 34.8 | 0.2 | 0.8 | 0.2 | 0.4 |
| 4.4 | 4.4 | | | 87.2 | 77.5 | | | | |

**UK Official Bank Rate** – on April 8, 2024 = **5.25%**

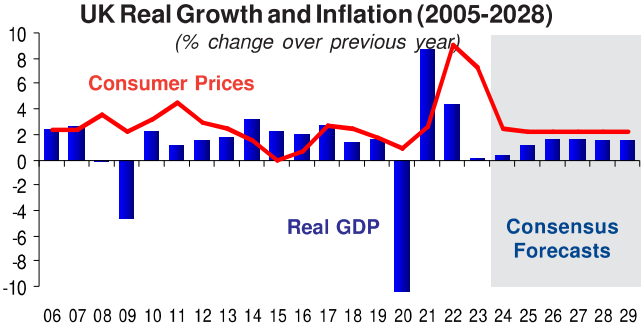
**Average probabilities of a change in the Bank Rate on May 9:**

Increase 0.8% No change 72.5% Decrease 26.7%

| Consensus Forecasts | End Jun '24 | End Sep '24 | End Dec '24 | End Mar '25 | End Jun '25 | End Sep '25 | End Dec '25 | End Mar '26 |
|---|---|---|---|---|---|---|---|---|
| Mean Average: | 5.03% | 4.72% | 4.41% | 4.07% | 3.80% | 3.61% | 3.40% | 3.33% |
| Mode (most frequent): | 5.00% | 4.50% | 4.50% | 4.00% | 4.00% | 3.00% | 3.00% | 3.00% |

**UK Real Growth and Inflation (2005-2028)**

*(% change over previous year)*

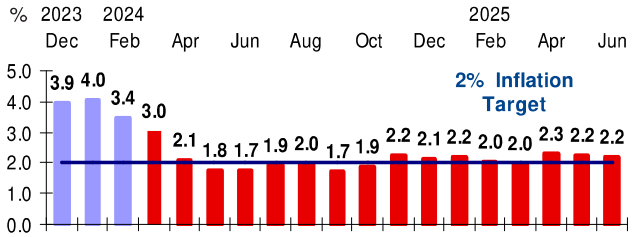



## Tentative Signs of Recovery in Q1

The UK ended 2023 in technical recession, having contracted by -0.3% (q-o-q) in Q4 and -0.1% in Q3. Higher defence spending (and public spending in general) in H2 2023 prevented the economy from entering a deeper contraction and masked weakness in industry last year. However, going into 2024, monthly indicators suggest a shallow, but broader, recovery in Q1. GDP grew by +0.2% (m-o-m) in January, on the back of a similar uptick in services, indeed the service PMIs for February and March point to modest growth in this key sector. Moreover, two other sector PMIs returned to growth in March after an extended period in the doldrums. One was construction, which has been weighed down by high interest rates and falling house prices, but signs of recent stabilisation in the sector have prompted a pick-up in some building projects. The manufacturing PMI also returned to growth: new orders rose following year-long downturns and business optimism rose to an 11-month high. Still, supply chains are under pressure from Red Sea route disruption, while demand from Europe remains weak. Elsewhere, retail sales rebounded +3.6% (m-o-m) in January, but February is estimated to be flat. Spending may pick back up as purchasing power improves amid slower inflation and wage gains.

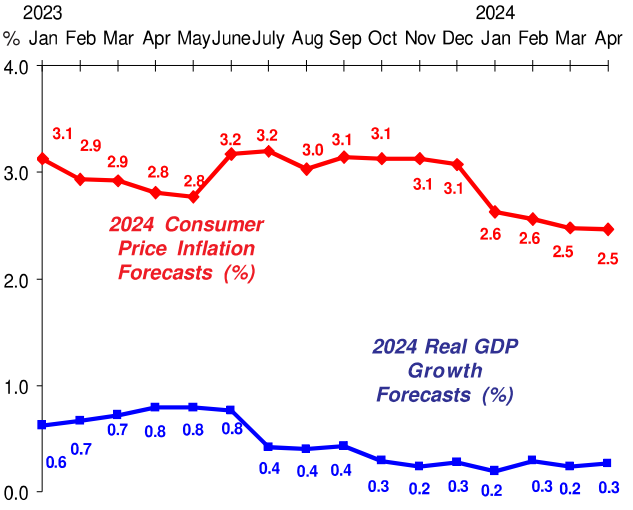
Policies aimed at lifting disposable incomes and productivity (namely an increase in the minimum wage, cuts to national insurance contributions, and expanding eligibility to free childcare) commenced on April 1. Meanwhile, Ofgem's energy price cap was lowered by 12%. Our panel expects the CPI to moderate to the BoE's 2% target in April. The Bank of England held the bank rate at 5.25% on March 21, with the meeting marking the first since September 2021 in which no member voted for a rate hike.

**Monthly CPI Outturns (INSEE) and y-o-y Consensus Forecasts** *(% change on the same period of the previous year)*




**2024 GDP Growth and Inflation Forecasts**

Consensus Forecasts from Survey of:



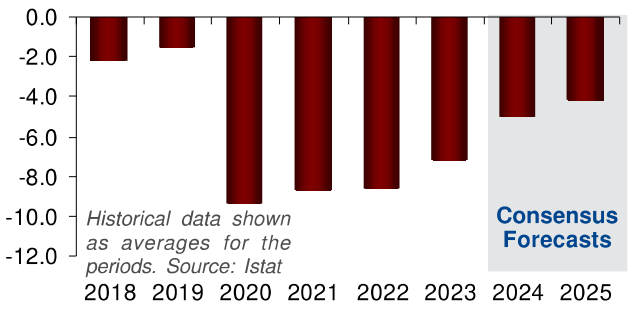
# ITALY APRIL 2024

| | Average % Change on Previous Calendar Year | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gross Domestic Product | | Household Consumption | | Gross Fixed Investment | | Industrial Production | | Consumer Prices (CPI) | | Producer Prices | | Contractual Hourly Earnings | |
| | *Prodotto Interno Lordo* | | *Consumi delle Famiglie* | | *Investimenti Fissi Lordi* | | *Produzione Industriale* | | *Prezzi al Consumo (NIC)* | | *Prezzi alla Produzione* | | *Retribuzione Oraria Contrattuali* | |
| **Economic Forecasters** | **2024** | **2025** | **2024** | **2025** | **2024** | **2025** | **2024** | **2025** | **2024** | **2025** | **2024** | **2025** | **2024** | **2025** |
| **LC Macro Advisors** | 1.0 | 1.4 | 0.1 | 1.1 | 4.9 | 4.1 | -0.5 | 2.1 | 1.4 | 2.0 | -4.6 | 1.7 | 6.3 | 2.7 |
| **Banca Nzle del Lavoro** | 0.9 | 1.1 | -0.1 | 0.7 | 2.5 | 2.7 | 0.4 | 1.4 | 1.4 | 1.9 | na | na | na | na |
| **Centro Europa Ricerche** | 0.9 | 0.8 | 1.0 | 0.2 | 1.0 | 1.2 | na | na | 2.3 | 2.1 | na | na | na | na |
| **REF Ricerche** | 0.9 | 0.8 | 0.8 | 0.3 | 0.9 | -1.3 | na | na | 1.7 | 2.1 | na | na | 3.7 | 3.6 |
| **Goldman Sachs** | 0.8 | 1.2 | 1.4 | 1.1 | -0.6 | 1.8 | na | na | 2.7 | 1.6 | na | na | na | na |
| **Natixis** | 0.8 | 1.1 | 0.0 | 1.1 | 2.8 | 1.4 | na | na | 1.7 | 1.7 | na | na | na | na |
| **Rabobank** | 0.8 | 1.2 | -0.2 | 1.1 | 3.6 | 2.0 | na | na | 1.4 | 1.9 | na | na | na | na |
| **UBS** | 0.8 | 0.8 | -0.1 | 0.7 | 3.4 | 1.8 | na | na | na | na | na | na | 2.5 | 2.1 |
| **Prometeia** | 0.7 | 0.9 | 0.4 | 1.0 | -2.0 | -1.7 | na | na | 1.8 | 2.1 | na | na | na | na |
| **Allianz** | 0.7 | 1.4 | 0.1 | 1.1 | na | na | 0.6 | 1.1 | 1.9 | 2.0 | na | na | 3.5 | na |
| **Deutsche Bank** | 0.7 | 1.3 | 0.2 | 1.2 | 2.4 | 3.5 | na | na | 2.0 | 2.0 | na | na | na | na |
| **ING Financial Markets** | 0.7 | 1.0 | -0.1 | 1.0 | -0.4 | -0.2 | na | na | 1.5 | 1.9 | -4.1 | 1.1 | 2.9 | 2.5 |
| **Societe Generale CIB** | 0.7 | 0.8 | 1.1 | 0.7 | 2.5 | 1.3 | na | na | 0.8 | 1.6 | na | na | na | na |
| **Bloomberg Economics** | 0.7 | 1.1 | 0.0 | 1.0 | 0.6 | 1.0 | na | na | 0.9 | 0.9 | na | na | 3.5 | 3.2 |
| **Intesa Sanpaolo** | 0.7 | 1.2 | 0.4 | 1.3 | 2.4 | 1.4 | -0.9 | 1.6 | 1.8 | 2.2 | -4.9 | -1.1 | 1.8 | 1.9 |
| **Fitch Ratings** | 0.7 | 1.3 | 1.0 | 1.6 | 0.9 | 1.1 | na | na | 1.7 | 2.1 | na | na | na | na |
| **Oxford Economics** | 0.7 | 1.1 | 0.2 | 0.8 | 3.4 | 0.6 | -0.1 | 4.2 | 1.1 | 1.6 | na | na | na | na |
| **S&P Global Ratings** | 0.6 | 1.2 | 0.7 | 1.3 | 0.9 | 1.8 | na | na | 2.0 | 2.0 | na | na | na | na |
| **HSBC** | 0.6 | 0.8 | 0.1 | 1.0 | 1.9 | 0.7 | na | na | 1.1 | 1.8 | na | na | na | na |
| **UniCredit** | 0.6 | 1.1 | na | na | na | na | na | na | 1.7 | 1.9 | na | na | na | na |
| **Moody's Analytics** | 0.5 | 0.7 | na | na | -1.4 | 0.2 | 0.7 | 2.0 | 1.3 | 1.4 | -2.9 | 1.1 | na | na |
| **Confindustria** | 0.5 | na | 0.6 | na | -0.1 | na | 0.8 | na | 2.1 | na | na | na | na | na |
| **Bank of America - Merrill** | 0.5 | 1.1 | -0.4 | 0.7 | 2.6 | 1.3 | 0.4 | 1.9 | 1.7 | 1.5 | na | na | na | na |
| **Econ Intelligence Unit** | 0.5 | 1.1 | 0.7 | 1.0 | 0.2 | 1.6 | 0.5 | 1.6 | 1.9 | 1.8 | -0.9 | 1.4 | 3.9 | 3.3 |
| **Citigroup** | 0.5 | 0.8 | 0.4 | 0.7 | 2.0 | 1.7 | na | na | 1.2 | 1.7 | na | na | na | na |
| **S&P Global Market Intel** | 0.2 | 0.8 | -0.1 | 1.0 | 0.4 | 1.8 | 0.4 | 1.3 | 1.8 | 2.0 | -4.4 | 1.8 | na | na |
| **Capital Economics** | 0.2 | 0.5 | -0.4 | 0.6 | na | na | na | na | 1.5 | 1.5 | na | na | na | na |
| **Consensus (Mean)** | 0.7 | 1.0 | 0.3 | 0.9 | 1.4 | 1.3 | 0.2 | 1.9 | 1.6 | 1.8 | -3.6 | 1.0 | 3.5 | 2.8 |
| **Last Month's Mean** | 0.6 | 1.0 | 0.6 | 1.0 | 0.6 | 1.7 | 0.4 | 1.6 | 1.8 | 1.9 | -2.5 | 1.1 | 3.5 | 2.7 |
| **3 Months Ago** | 0.5 | 1.0 | 0.7 | 0.9 | 0.1 | 1.7 | 0.5 | 1.6 | 2.0 | 1.8 | -1.3 | 0.9 | 3.0 | 2.7 |
| **High** | 1.0 | 1.4 | 1.4 | 1.6 | 4.9 | 4.1 | 0.8 | 4.2 | 2.7 | 2.2 | -0.9 | 1.8 | 6.3 | 3.6 |
| **Low** | 0.2 | 0.5 | -0.4 | 0.2 | -2.0 | -1.7 | -0.9 | 1.1 | 0.8 | 0.9 | -4.9 | -1.1 | 1.8 | 1.9 |
| **Standard Deviation** | 0.2 | 0.2 | 0.5 | 0.3 | 1.7 | 1.3 | 0.6 | 0.9 | 0.4 | 0.3 | 1.5 | 1.1 | 1.3 | 0.6 |
| **Comparison Forecasts** | | | | | | | | | | | | | | |
| **Banca d'Italia (Dec. '23)** | 0.6 | 1.1 | 0.9 | 1.2 | -0.1 | 1.5 | | | | | | | | |
| **Government (Sep. '23)** | 1.2 | | 1.3 | | 3.0 | | | | 2.3 | | | | | |
| **Eur Commission (Feb. '24)** | 0.7 | 1.2 | | | | | | | | | | | | |
| **IMF (Jan. '24)** | 0.7 | 1.1 | | | | | | | | | | | | |
| **OECD (Feb. '24)** | 0.7 | 1.2 | | | | | | | 1.8 | 2.2 | | | | |
| **UPB (Mar. '24)** | 0.8 | 1.1 | 1.3 | 1.4 | -0.3 | 1.3 | | | | | | | | |

## Government and Background Data

**Prime Minister -** Ms. Giorgia Meloni (Brothers of Italy). **Parliament -** Meloni won the largest percentage of votes at the election on September 25 and is currently holding talks to create a new coaltion government. **Next Election -** 2027 (parliamentary). **Nominal GDP -** Euro1,910bn (2022). **Population -** 59.0mn (IMF, 2022). **$/Euro Exchange Rate -** 1.053 (average, 2022).

**General Government Budget Balance – % of GDP**




## Historical Data

| ** % change on previous year* | **2020** | **2021** | **2022** | **2023** |
|---|---|---|---|---|
| **Gross Domestic Product*** | -9.0 | 8.3 | 4.0 | 0.9 |
| **Household Consumption*** | -10.3 | 5.4 | 4.9 | 1.2 |
| **Gross Fixed Investment*** | -7.9 | 20.3 | 8.6 | 4.7 |
| **Industrial Production*** | -11.5 | 12.3 | 0.3 | -0.2 |
| **Consumer Prices (CPI)*** | -0.2 | 1.9 | 8.1 | 5.7 |
| **Producer Prices*** | -3.3 | 10.7 | 34.4 | -5.6 |
| **Contractual Hourly Earnings*** | 0.6 | 0.6 | 1.1 | 3.5 |
| **Unemployment Rate, %** | 9.3 | 9.3 | 8.1 | 7.6 |
| **Current Account, Euro bn** | 64.5 | 43.3 | -30.9 | 10.6 |
| **Budget Balance, net lending/borrowing, (Maastricht definition), Euro bn** | -156 | -159 | -168 | -149 |
| **3 mth Euro, %** (end yr) | -0.5 | -0.6 | 2.1 | 3.9 |
| **10 Yr Italian Govt Bond, %** (end yr) | 0.5 | 1.2 | 4.7 | 3.7 |

| Year Average | | Annual Total | | | | Rates on Survey Date 3.9% | | | 3.8% |
|---|---|---|---|---|---|---|---|---|---|
| Unemployment Rate (%) | | Current Account (Euro bn) | | General Govt Budget Bal (Maastricht) (Euro bn) | | 3 month Euro Rate (%) | | 10 Year Italian Govt Bond Yield (%) | |
| *Tasso di Disoccupazione (%)* | | *Partite Correnti (€ mld)* | | *Indebitamento netto (Maastricht) (€ mld)* | | *Interessi Euro Trimestrali (%)* | | *Buoni del Tesoro Decennali (%)* | |
| 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | End Jul'24 | End Apr'25 | End Jul'24 | End Apr'25 |
| 7.1 | 6.6 | 31.5 | 40.0 | -94.6 | -89.9 | 3.9 | 3.2 | 3.7 | 3.4 |
| 7.6 | 7.6 | na | na | na | na | na | na | na | na |
| 7.4 | 7.3 | 18.8 | 31.9 | -96.3 | -76.6 | 3.9 | 3.8 | 3.9 | 3.8 |
| 6.9 | 6.3 | 29.9 | 46.0 | -98.9 | -88.8 | 3.7 | 3.4 | 3.8 | 3.7 |
| 7.9 | 8.0 | na | na | -91.2 | -70.8 | na | na | na | na |
| 7.3 | 7.2 | na | na | na | na | na | na | na | na |
| 7.3 | 7.1 | na | na | na | na | na | na | na | na |
| 7.6 | 7.6 | 21.7 | 22.3 | na | na | na | na | na | na |
| 7.1 | 7.2 | na | na | -95.9 | -83.4 | 3.6 | 2.8 | 3.8 | 3.9 |
| 7.7 | 7.6 | na | na | na | na | na | na | na | na |
| 7.2 | 6.9 | na | na | na | na | na | na | na | na |
| 7.5 | 7.4 | 22.4 | 37.0 | -103.4 | -80.0 | 3.6 | 2.9 | 3.8 | 4.0 |
| 7.4 | 7.6 | 22.2 | 19.1 | -133.2 | -131.9 | na | na | na | na |
| 8.0 | 8.0 | na | na | na | na | na | na | na | na |
| 7.6 | 7.9 | 17.1 | 36.7 | -94.2 | -82.0 | 3.7 | 2.6 | 3.9 | 3.8 |
| 7.2 | 6.9 | 12.9 | 34.2 | -130.3 | -94.0 | na | na | na | na |
| 7.7 | 8.0 | 29.1 | 35.2 | -95.2 | -82.3 | 3.2 | 1.9 | 3.9 | 4.1 |
| 7.5 | 7.6 | na | na | na | na | na | na | na | na |
| 7.4 | 7.2 | na | na | na | na | na | na | na | na |
| 7.8 | 7.7 | 22.0 | 27.0 | -104.0 | -92.0 | na | na | na | na |
| 7.6 | 7.8 | 41.3 | 52.9 | -148.9 | -119.4 | na | na | na | na |
| 7.4 | na | 45.7 | na | -79.7 | na | na | na | na | na |
| 7.7 | 7.6 | 23.8 | 27.3 | na | na | na | na | na | na |
| 7.6 | 7.6 | 20.4 | 24.8 | -112.3 | -88.2 | 3.9 | 2.9 | 4.2 | 4.2 |
| 7.4 | 7.2 | 11.2 | 15.2 | -104.3 | -88.6 | na | na | 3.4 | 3.2 |
| 7.8 | 8.2 | 44.8 | 41.6 | -101.9 | -103.1 | 3.7 | 2.6 | 4.4 | 4.3 |
| 7.8 | 7.8 | 16.0 | 22.0 | -117.7 | -99.2 | na | na | na | na |
| 7.5 | 7.5 | 25.3 | 32.1 | -106.0 | -91.9 | 3.7 | 2.9 | 3.9 | 3.8 |
| 7.6 | 7.5 | 25.5 | 31.1 | -94.7 | -84.2 | | | | |
| 7.8 | 7.8 | 25.8 | 32.0 | -94.2 | -83.3 | | | | |
| 8.0 | 8.2 | 45.7 | 52.9 | -79.7 | -70.8 | 3.9 | 3.8 | 4.4 | 4.3 |
| 6.9 | 6.3 | 11.2 | 15.2 | -148.9 | -131.9 | 3.2 | 1.9 | 3.4 | 3.2 |
| 0.3 | 0.5 | 10.4 | 10.3 | 17.5 | 15.6 | 0.2 | 0.5 | 0.3 | 0.3 |
| 7.7 | 7.6 | | | | | | | | |
| 7.3 | | | | | | | | | |
| 7.5 | 7.4 | | | | | | | | |

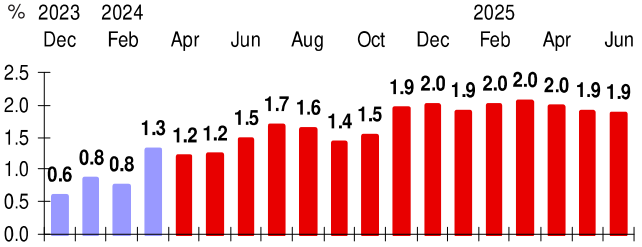
**Manufacturing PMI Grows; Fiscal Stimulus Still Strong**

Seasonally-adjusted industrial production contracted -1.2% (m-o-m) in January, with only energy production (+2.5% m-o-m) providing support. This represented a weak start to 2024. February production (released after our deadline) managed +0.1% (m-o-m), though, and the manufacturing PMI edged into growth territory for the first time in a year, from 48.7 in February to 50.4 in March, amid improved new orders and output. Domestic rather than external demand boosted orders, as European sales shrank. Also of note were producers running down existing stockpiles to meet demand. While the message coming from manufacturing is somewhat mixed, March's services PMI was largely upbeat at 54.6, again powered by domestic orders. As a result, the gap between Italian and German 10-year bonds narrowed to their smallest differential since November 2021, highlighting increased confidence in Italian economic momentum.

Nevertheless, much of the resilience in activity is being powered by sizeable fiscal stimulus, and with growth expected to average 0.7% this year, the fiscal shortfall is not sustainable over the medium-term without structural reforms to energise economic sectors. In 2019, the budget deficit accounted for -1.5% of GDP, but since Covid, deficit spending has ballooned, hitting -9.4% of GDP in 2020 and reaching -7.2% in 2023. The key policy behind this has been the 'Superbonus' which reimbursed households 110% of the cost of energy-efficient home renovation. It continues to blow a hole in this year's budget, despite the size of reimbursement having been reduced. The scheme has triggered a boom in residential construction. The government has also maintained caps on regulated energy costs and tax relief; these are also contributing to the fiscal deficit, which our panel has revised upward for 2024 and 2025.

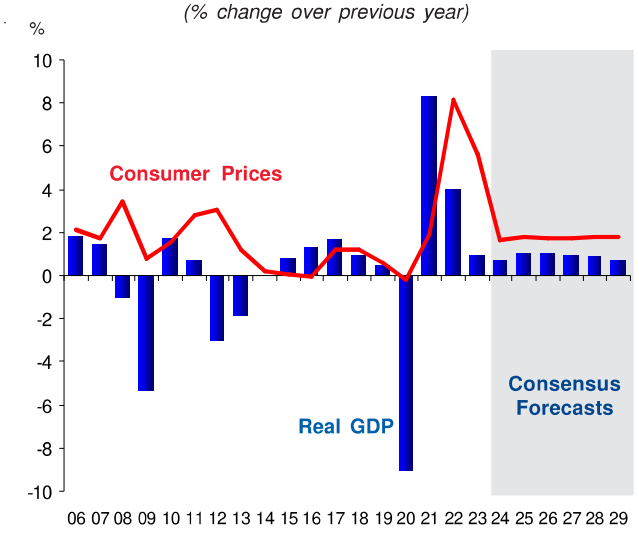
**Monthly CPI Outturns and y-o-y Consensus Forecasts**

*(% change on the same period of the previous year)*



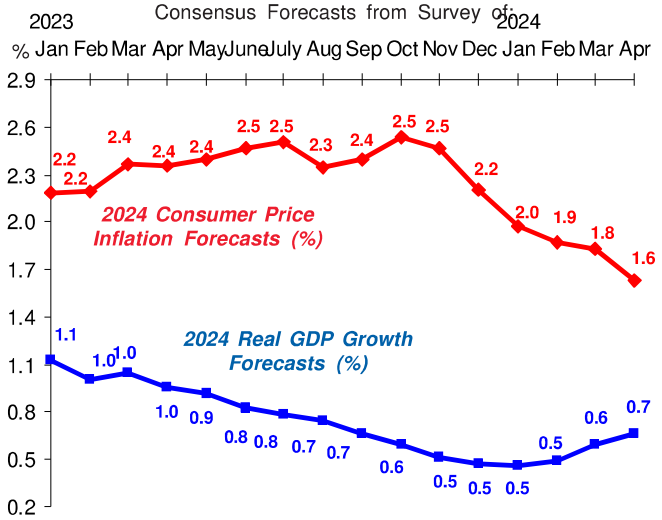

**Real Growth and Inflation (2005-2028)**

*(% change over previous year)*




**2024 GDP Growth and Inflation Forecasts**

Consensus Forecasts from Survey of:



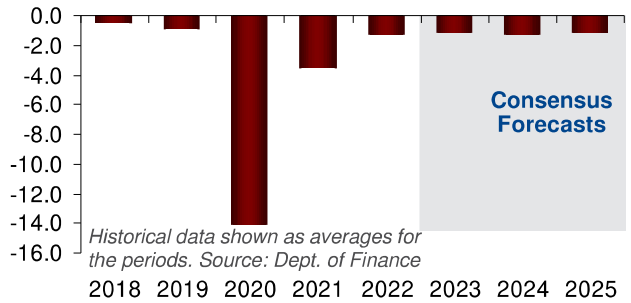
# CANADA — APRIL 2024

| | Average % Change on Previous Calendar Year | | | | | | | | | | | | | | | | Annual Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gross Domestic Product | | Household Final Consumption Expenditure | | Machinery & Equip-ment Investment | | Net Operat-ing Surplus: Corporations | | Industrial Production | | Consumer Prices | | Industrial Product Prices | | Average Hourly Earnings | | Housing Starts (thousand units) | |
| | *Produit Intérieur Brut* | | *Dépenses de Consommation Finale des Ménages* | | *Investissement de Machines et Matériel* | | *Excédent d'exploitation net: sociétés* | | *Production Industrielle* | | *Prix à la Consom-mation* | | *Prix des Produits Industriels* | | *Rémunér-ation Horaire Moyenne* | | *Construc-tion de Logements mises en chantier, milliers* | |
| **Economic Forecasters** | **2024** | **2025** | **2024** | **2025** | **2024** | **2025** | **2024** | **2025** | **2024** | **2025** | **2024** | **2025** | **2024** | **2025** | **2024** | **2025** | **2024** | **2025** |
| **Econ Intelligence Unit** | 1.7 | 2.1 | 1.9 | 2.2 | na | na | na | na | 0.3 | 1.0 | 2.5 | 2.3 | 1.0 | 2.2 | na | na | na | na |
| **Economap** | 1.3 | 2.0 | 1.2 | 1.9 | 0.5 | 2.2 | 5.0 | 8.0 | 1.5 | 1.7 | 2.6 | 2.2 | 1.0 | 2.0 | 3.4 | 3.2 | 240 | 245 |
| **BMO Capital Markets** | 1.2 | 2.0 | 1.0 | 1.9 | -1.0 | 2.0 | 6.0 | 5.0 | 1.5 | 1.5 | 2.6 | 2.2 | 0.0 | 2.0 | 3.4 | 3.2 | 240 | 245 |
| **University of Toronto** | 1.1 | 2.2 | 1.7 | 2.5 | -1.2 | 3.8 | -0.5 | 0.2 | na | na | 2.1 | 1.8 | na | na | na | na | 228 | 234 |
| **Moody's Analytics** | 1.0 | 1.9 | na | na | -0.9 | 0.9 | -1.4 | -2.1 | 0.7 | 1.1 | 2.5 | 1.9 | -0.7 | 1.5 | 3.6 | 3.5 | 252 | 250 |
| **Capital Economics** | 1.0 | 2.3 | 1.1 | 1.5 | -3.8 | 2.3 | na | na | na | na | 2.3 | 1.8 | na | na | na | na | na | na |
| **JP Morgan** | 1.0 | 1.7 | 1.3 | 2.1 | 0.5 | 1.5 | na | na | na | na | 2.4 | 2.3 | na | na | na | na | na | na |
| **Scotia Economics** | 1.0 | 1.8 | 0.9 | 1.2 | na | na | 1.8 | 10.3 | 0.6 | 2.2 | 2.6 | 2.0 | na | na | na | na | 248 | 260 |
| **CIBC Capital Markets** | 1.0 | 1.6 | 0.9 | 1.4 | -1.6 | 2.0 | na | na | na | na | 2.3 | 1.8 | na | na | na | na | 238 | 257 |
| **Inst Fiscal Studies** | 1.0 | 2.1 | 1.2 | 2.0 | -1.0 | 1.8 | na | na | 1.0 | 1.6 | 2.8 | 2.1 | na | na | na | na | 235 | 247 |
| **Desjardins** | 0.9 | 2.0 | 1.0 | 1.7 | -2.6 | 3.1 | 9.6 | 6.6 | na | na | 2.3 | 2.4 | 0.4 | 1.0 | na | na | 219 | 235 |
| **Stokes Econ Consulting** | 0.9 | 2.1 | 1.0 | 2.3 | 3.7 | 0.6 | -8.0 | 9.1 | na | na | 2.5 | 2.0 | na | na | na | na | 240 | 246 |
| **Toronto Dominion Bank** | 0.9 | 1.5 | 1.4 | 1.2 | -0.4 | 2.9 | na | na | na | na | 2.7 | 2.1 | na | na | na | na | 230 | 232 |
| **Informetrica** | 0.9 | 1.8 | 0.9 | 1.5 | -1.5 | 2.7 | 2.6 | 7.7 | 1.1 | 1.9 | 2.6 | 2.2 | na | na | 3.3 | 3.0 | 240 | 256 |
| **Royal Bank of Canada** | 0.8 | 2.1 | 0.6 | 2.1 | -1.8 | 2.5 | 5.3 | 3.3 | na | na | 2.5 | 1.9 | na | na | na | na | 244 | 277 |
| **Conf Board of Canada** | 0.8 | 2.3 | 1.2 | 2.3 | 0.1 | 5.1 | -5.5 | 1.0 | na | na | 2.7 | 2.1 | na | na | na | na | 245 | 249 |
| **National Bank of Canada** | 0.6 | 1.2 | 0.5 | 1.0 | -3.2 | 1.1 | -3.2 | 4.9 | na | na | 2.3 | 2.3 | na | na | na | na | 240 | 264 |
| **Citigroup** | 0.6 | 0.9 | 0.5 | 0.8 | -2.6 | 1.7 | na | na | na | na | 2.6 | 2.1 | na | na | na | na | na | na |
| **Oxford Economics** | -0.3 | 2.0 | 0.5 | 2.3 | -2.5 | 7.4 | -1.1 | 6.9 | 0.6 | 1.8 | 2.6 | 2.1 | -1.3 | 0.5 | na | na | 220 | 258 |
| **Consensus (Mean)** | 0.9 | 1.9 | 1.0 | 1.8 | -1.1 | 2.6 | 0.9 | 5.1 | 0.9 | 1.6 | 2.5 | 2.1 | 0.1 | 1.5 | 3.4 | 3.2 | 237 | 250 |
| **Last Month's Mean** | 0.7 | 1.8 | 1.0 | 1.8 | -1.2 | 2.4 | -0.4 | 4.4 | 0.7 | 1.5 | 2.5 | 2.1 | 0.4 | 1.6 | 3.4 | 3.4 | 238 | 249 |
| **3 Months Ago** | 0.4 | 1.9 | 0.6 | 1.7 | -0.2 | 2.7 | -3.3 | 4.3 | 0.3 | 1.6 | 2.5 | 2.1 | 0.9 | 1.9 | 3.4 | 3.4 | 236 | 240 |
| **High** | 1.7 | 2.3 | 1.9 | 2.5 | 3.7 | 7.4 | 9.6 | 10.3 | 1.5 | 2.2 | 2.8 | 2.4 | 1.0 | 2.2 | 3.6 | 3.5 | 252 | 277 |
| **Low** | -0.3 | 0.9 | 0.5 | 0.8 | -3.8 | 0.6 | -8.0 | -2.1 | 0.3 | 1.0 | 2.1 | 1.8 | -1.3 | 0.5 | 3.3 | 3.0 | 219 | 232 |
| **Standard Deviation** | 0.4 | 0.4 | 0.4 | 0.5 | 1.8 | 1.7 | 5.1 | 3.8 | 0.4 | 0.4 | 0.2 | 0.2 | 0.9 | 0.7 | 0.2 | 0.2 | 9 | 12 |
| **Comparison Forecasts** | | | | | | | | | | | | | | | | | | |
| **IMF (Jan. '24)** | 1.4 | 2.3 | | | | | | | | | | | | | | | | |
| **OECD (Feb. '24)** | 0.9 | 1.9 | | | | | | | | | 2.6 | 1.9 | | | | | | |

## Government and Background Data

**Prime Minister -** Mr. Justin Trudeau (Liberals). **Government -** The Liberals hold 160 out of 338 seats in parliament (170 seats are needed for an outright majority). **Next Election -** by 20 October 2025 (Federal election). **Nominal GDP -** C$2,783bn (2022). **Population -** 38.8mn (IMF, 2022). **C$/$ Exchange Rate -** 1.301 (average, 2022).

## Federal Government Budget Balance – % of GDP




## Historical Data

| | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|
| **Gross Domestic Product*** | -5.0 | 5.3 | 3.8 | 1.1 |
| **Household Consumption Expenditure*** | -6.4 | 5.2 | 5.1 | 1.7 |
| **Machinery & Eqpt. Invt*** | -15.0 | 14.0 | -0.3 | -6.2 |
| **Net Operating Surplus: Corporations*** | 0.9 | 33.2 | 14.7 | -18.1 |
| **Industrial Production*** | -7.5 | 5.0 | 3.9 | -0.6 |
| **Consumer Prices*** | 0.7 | 3.4 | 6.8 | 3.9 |
| **Industrial Product Prices*** | -0.4 | 13.9 | 12.8 | -1.8 |
| **Average Hourly Earnings*** | 3.6 | 2.8 | 4.0 | 3.5 |
| **Housing Starts, '000 units** | 218 | 271 | 262 | 240 |
| **Unemployment Rate, %** | 9.7 | 7.5 | 5.3 | 5.4 |
| **Current Account, C$bn** | -44.8 | 0.4 | -10.3 | -17.8 |
| **Federal Govt Budget Balance, fiscal years, C$bn** | -314 | -90.3 | -35.3 | -33.1 *e* |
| **3 mth Trsy Bills, %** (end yr) | 0.1 | 0.2 | 4.3 | 4.9 |
| **10 Yr Govt Bond, %** (end yr) | 0.7 | 1.4 | 3.3 | 3.1 |

*e = consensus estimate based on latest survey*

| Year Average | | Annual Total | | Fiscal Years (Apr-Mar) | | Rates on Survey Date 5.0% | | 3.7% | |
|---|---|---|---|---|---|---|---|---|---|
| Unemployment Rate (%) | | Current Account (C$ bn) | | Federal Govt Budget Balance (C$ bn) | | 3 month Treasury Bill Rate (%) | | 10 Year Government Bond Yield (%) | |
| *Taux de Chômage (%)* | | *Balance Courante (C$ md)* | | *Balance Budgétaire (C$ md)* | | *Rendement sur les Bons du Trésor de 3 mois %* | | *Rendement des Obligations d'État de 10 ans %* | |
| 2024 | 2025 | 2024 | 2025 | FY 24-25 | FY 25-26 | End Jul'24 | End Apr'25 | End Jul'24 | End Apr'25 |
| 5.9 | 5.6 | -19.4 | -15.8 | na | na | 5.0 | 4.1 | 3.7 | 2.6 |
| 6.3 | 6.0 | -16.8 | -21.0 | -38.0 | -35.0 | 4.9 | 3.8 | 3.4 | 3.1 |
| 6.3 | 6.0 | -17.0 | -21.0 | -42.0 | -45.0 | 4.8 | 3.8 | 3.5 | 3.1 |
| 6.4 | 6.4 | -20.3 | -31.3 | na | na | 4.8 | 4.0 | 3.6 | 3.9 |
| 6.2 | 6.3 | 20.0 | -1.3 | na | na | na | na | na | na |
| 6.2 | 6.1 | na | na | na | na | na | na | na | na |
| 6.0 | 6.0 | na | na | na | na | na | na | na | na |
| 6.0 | 6.5 | na | na | -38.4 | -38.3 | 4.9 | 3.6 | 3.5 | 3.6 |
| 6.1 | 5.8 | na | na | na | na | 4.5 | 3.4 | 3.4 | 3.1 |
| 6.1 | 6.0 | na | na | na | na | 4.8 | 3.6 | 3.4 | 3.1 |
| 6.3 | 6.2 | -15.6 | -28.3 | na | na | 4.5 | 3.0 | 3.3 | 2.9 |
| 6.1 | 6.2 | na | na | na | na | na | na | na | na |
| 6.3 | 6.6 | -4.0 | -10.6 | na | na | 4.8 | 3.3 | 3.4 | 2.9 |
| 6.3 | 6.4 | -30.3 | -30.8 | -38.6 | -38.0 | 4.5 | 3.3 | 3.4 | 3.2 |
| 6.3 | 6.3 | -16.4 | -14.5 | na | na | 4.5 | 3.5 | 3.2 | 2.9 |
| 6.0 | 5.8 | -0.3 | 11.5 | -31.8 | -28.6 | 4.8 | 3.2 | 3.3 | 3.2 |
| 6.5 | 6.9 | -15.0 | -20.0 | na | na | 4.7 | 3.3 | 3.4 | 2.9 |
| 6.5 | 7.0 | -11.0 | -31.3 | -45.0 | -31.8 | 5.0 | 3.5 | 3.8 | 3.2 |
| 6.9 | 7.1 | -17.2 | -29.8 | na | na | 4.7 | 3.7 | 3.6 | 3.5 |
| 6.2 | 6.3 | -12.6 | -18.8 | -39.0 | -36.1 | 4.7 | 3.5 | 3.4 | 3.1 |
| 6.2 | 6.2 | -24.2 | -29.9 | -37.1 | -33.3 | | | | |
| 6.3 | 6.2 | -29.3 | -36.4 | -37.4 | -33.0 | | | | |
| 6.9 | 7.1 | 20.0 | 11.5 | -31.8 | -28.6 | 5.0 | 4.1 | 3.8 | 3.9 |
| 5.9 | 5.6 | -30.3 | -31.3 | -45.0 | -45.0 | 4.5 | 3.0 | 3.2 | 2.6 |
| 0.2 | 0.4 | 12.2 | 12.9 | 4.4 | 5.7 | 0.2 | 0.3 | 0.2 | 0.3 |

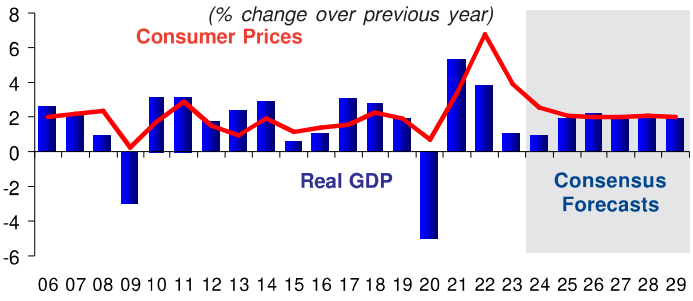
**Canada Overnight Lending Rate – April 8, 2024 = 5.00%**

**Average probabilities of a change in the Lending Rate on June 5:**

**Increase** 0.1% **No change** 44.3% **Decrease** 55.6%

| Consensus Forecasts | End Jun '24 | End Sep '24 | End Dec '24 | End Mar '25 | End Jun '25 | End Sep '25 | End Dec '25 | End Mar '26 |
|---|---|---|---|---|---|---|---|---|
| Mean Average: | 4.81% | 4.52% | 4.12% | 3.70% | 3.29% | 3.04% | 2.85% | 2.71% |
| Mode (most frequent): | 4.75% | 4.50% | 4.00% | 3.75% | 3.50% | 3.25% | 3.00% | 3.00% |

**Canada Real Growth and Inflation (2005-2028)**



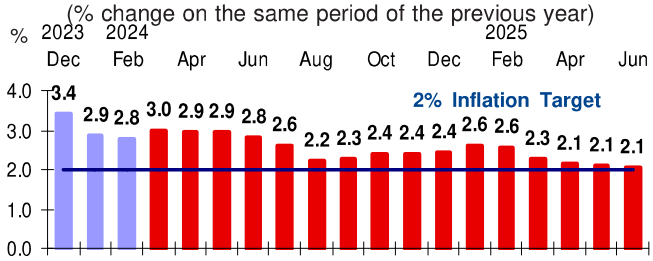

## January GDP Report Boosts Consensus

January's +0.6% (m-o-m) jump in GDP growth has helped to brighten a rather muted outlook. The January outturn, which compared well against a -0.1% fall in December GDP, was supported by services (up +0.7% in January), thanks to an end to public sector strikes in Quebec, which in turn boosted education, healthcare and social assistance activity. Elsewhere, real estate and rentals rose by +0.4% (m-o-m). Despite high mortgage rates, home costs have surged as urban markets like Toronto and Montreal experience overdemand and low housing supply. Indeed, in December 2023, the Federal government declared a housing crisis. Lack of construction projects, along with a 3.2% surge in population growth last year, has exacerbated demand for accommodation. Our panel predicts that housing starts in 2024 will reach 238,000, close to 2023 numbers but down from 271,000 in 2021. Meanwhile, the goods-producing sectors also advanced in January, boosted by manufacturing (up +0.9%) and utilities (rebounding by +3.2%), the latter on the back of exceptionally severe weather in Western Canada. According to an early estimate for February GDP growth (which is expected to rise by +0.4% m-o-m), utilities output declined as payback for a strong January. With the first two months of 2024 looking upbeat, alongside a strong US economy and increased investment in the natural resources sectors (including pipeline and energy infrastructure projects nearing completion), our panel has lifted its 2024 GDP forecast.

The Bank of Canada kept its policy rate unchanged on April 10 but upgraded its outlook on GDP growth. Meanwhile, February CPI slowed to 2.8% (y-o-y), as did core CPI, although rent and mortgage costs (and a base-base-year effect in natural gas prices) put upside pressure on CPI. Labor market conditions are easing: employment edged down in March, while unemployment rose 0.3%-pts to 6.1%.

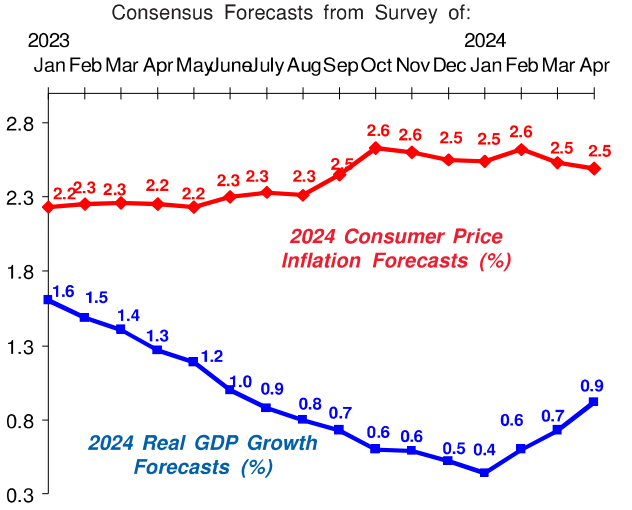
**Monthly CPI Outturns and y-o-y Consensus Forecasts**

(% change on the same period of the previous year)




**2024 GDP Growth and Inflation Forecasts**

Consensus Forecasts from Survey of:



# EURO ZONE — APRIL 2024

*The EURO ZONE is: Austria, Belgium, Croatia, Cyprus, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Portugal, Slovakia, Slovenia and Spain.*

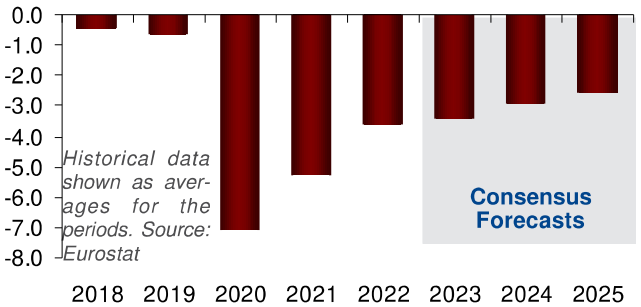
**Average % Change on Previous Calendar Year**

| Economic Forecasters | Gross Domestic Product | | Private Consump-tion | | Govt Con-sumption | | Gross Fixed Investment | | Industrial Product-ion | | Harmo-nised Consumer Prices (HICP) | | Core HICP (ex. energy, food, alcohol & tobacco | | Industrial Producer Prices | | Hourly Labour Costs – Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 |
| **Econ Intelligence Unit** | 0.8 | 1.6 | 1.0 | 1.5 | 1.0 | 1.3 | -0.7 | 2.9 | 0.2 | 2.0 | 2.4 | 2.0 | na | na | -2.3 | 0.4 | na | na |
| **ETLA** | 0.8 | 1.7 | 1.0 | 1.5 | 0.5 | 0.5 | 0.5 | 2.0 | na | na | 2.5 | 2.0 | 2.8 | 2.0 | na | na | na | na |
| **Allianz** | 0.7 | 1.5 | na | na | na | na | na | na | na | na | 2.4 | 2.2 | 2.8 | 2.3 | na | na | na | na |
| **BNP Paribas** | 0.7 | 1.7 | 0.8 | 1.5 | na | na | na | na | na | na | 2.3 | 2.0 | 2.5 | 2.2 | na | na | na | na |
| **FUNCAS** | 0.7 | 1.5 | 1.1 | 1.7 | 1.0 | 0.5 | 1.5 | 2.0 | na | na | 2.5 | 2.2 | na | na | na | na | na | na |
| **IWH Halle Institute** | 0.7 | 1.6 | 1.0 | 2.1 | 1.2 | 1.0 | 1.2 | 1.3 | -0.8 | 0.4 | 2.4 | 1.9 | na | na | na | na | 3.7 | 2.5 |
| **Natixis** | 0.7 | 1.4 | 1.0 | 1.4 | 1.8 | 1.3 | 1.4 | 1.3 | na | na | 2.3 | 1.8 | 2.6 | 1.9 | na | na | na | na |
| **Schroders** | 0.7 | 1.8 | 0.7 | 1.3 | 1.6 | 1.2 | 1.4 | 1.5 | na | na | 2.4 | 2.6 | 3.2 | 3.0 | na | na | 4.6 | 4.2 |
| **Moody's Analytics** | 0.7 | 1.6 | na | na | 1.5 | 1.2 | -0.5 | 1.9 | -0.8 | 2.5 | 2.2 | 1.8 | na | na | -1.6 | 1.4 | na | na |
| **Goldman Sachs** | 0.7 | 1.4 | 1.9 | 1.6 | na | na | 0.1 | 1.8 | na | na | 2.3 | 2.1 | 2.5 | 2.0 | na | na | na | na |
| **UBS** | 0.6 | 1.2 | 1.2 | 1.1 | 0.6 | 0.7 | 1.4 | 1.9 | na | na | 2.4 | 2.1 | 2.6 | 2.2 | na | na | na | na |
| **Societe Generale CIB** | 0.6 | 1.3 | 1.0 | 1.2 | 1.4 | 0.8 | 0.7 | 1.0 | na | na | 2.3 | 2.0 | 2.6 | 2.2 | na | na | na | na |
| **Oxford Economics** | 0.6 | 1.8 | 1.1 | 2.0 | 0.9 | 0.5 | 0.2 | 2.8 | -0.6 | 2.5 | 2.1 | 1.3 | 2.4 | 2.0 | -5.7 | -4.5 | na | na |
| **Bloomberg Economics** | 0.5 | 1.4 | 1.3 | 1.5 | 1.2 | 0.8 | -0.6 | 1.6 | na | na | 2.2 | 1.4 | 2.5 | 1.8 | na | na | 3.8 | 2.9 |
| **S&P Global Mkt Intelligence** | 0.5 | 1.5 | 0.9 | 1.6 | 1.5 | 1.5 | -0.2 | 2.8 | 0.0 | 2.5 | 2.5 | 2.0 | 2.7 | 2.2 | -1.7 | 1.1 | na | na |
| **HSBC** | 0.5 | 1.3 | 0.9 | 1.5 | 0.9 | -0.1 | 1.0 | 1.4 | -1.1 | 1.7 | 2.5 | 2.1 | 2.6 | 2.1 | na | na | na | na |
| **Morgan Stanley** | 0.5 | 1.0 | 0.6 | 1.1 | 1.1 | 1.0 | -0.2 | 0.6 | na | na | 2.4 | 2.1 | 2.6 | 2.1 | na | na | na | na |
| **UniCredit** | 0.5 | 1.2 | 0.8 | 1.3 | 1.6 | 1.2 | 0.2 | 1.7 | na | na | 2.3 | 1.8 | 2.6 | 2.0 | na | na | na | na |
| **Intesa Sanpaolo** | 0.5 | 1.3 | 0.8 | 1.3 | 1.0 | 0.4 | 0.0 | 2.4 | -0.9 | 2.2 | 2.4 | 1.8 | 2.3 | 1.5 | -3.6 | 3.5 | 3.5 | 3.0 |
| **Deutsche Bank** | 0.4 | 1.5 | 0.9 | 1.4 | 1.1 | 0.9 | -0.6 | 4.1 | na | na | 2.3 | 2.0 | 2.5 | 2.2 | na | na | na | na |
| **JP Morgan** | 0.4 | 1.0 | 1.0 | 1.0 | 1.0 | 0.6 | 1.7 | 1.4 | -0.6 | 2.2 | 2.5 | 1.8 | 2.8 | 2.2 | -1.5 | 0.5 | na | na |
| **Bank of America - Merrill** | 0.4 | 1.1 | 0.6 | 1.1 | 1.3 | 0.9 | 0.8 | 1.4 | -0.1 | 2.6 | 2.3 | 1.4 | na | na | na | na | na | na |
| **Bank Julius Baer** | 0.3 | 1.6 | 0.7 | 1.8 | 0.9 | 0.5 | 0.1 | 3.0 | 0.1 | 2.2 | 2.3 | 2.0 | 2.5 | 1.8 | na | na | 4.4 | 3.4 |
| **Nomura** | 0.3 | 1.3 | 0.6 | 1.2 | 1.4 | 0.9 | 3.0 | 4.4 | na | na | 2.3 | 1.8 | 2.7 | 2.4 | na | na | na | na |
| **Swiss Life Asset Mgrs** | 0.3 | 1.0 | na | na | na | na | na | na | na | na | 2.4 | 2.0 | na | na | na | na | na | na |
| **Citigroup** | 0.3 | 0.9 | 0.9 | 1.1 | 1.2 | 0.4 | 1.1 | 1.3 | -3.0 | 1.2 | 2.3 | 1.8 | 2.6 | 1.8 | na | na | na | na |
| **Capital Economics** | 0.2 | 1.2 | 0.6 | 1.2 | 1.0 | 0.8 | 0.9 | 1.2 | na | na | 2.2 | 2.0 | 2.8 | 2.3 | na | na | na | na |
| **Bank Vontobel** | 0.2 | 1.1 | 0.9 | 1.2 | 1.5 | 1.0 | 0.6 | 1.2 | na | na | 2.0 | 1.5 | na | na | na | na | na | na |
| **Commerzbank** | 0.1 | 0.9 | na | na | na | na | na | na | -0.9 | 2.5 | 2.5 | 3.0 | 2.7 | 3.0 | na | na | na | na |
| **Consensus (Mean)** | 0.5 | 1.4 | 0.9 | 1.4 | 1.2 | 0.8 | 0.6 | 2.0 | -0.7 | 2.0 | 2.3 | 1.9 | 2.6 | 2.1 | -2.7 | 0.4 | 4.0 | 3.2 |
| **Last Month's Mean** | 0.5 | 1.3 | 0.9 | 1.4 | 1.1 | 0.9 | 0.4 | 2.0 | -0.1 | 1.9 | 2.3 | 2.0 | 2.6 | 2.1 | -2.2 | 0.6 | 4.1 | 3.3 |
| **3 Months Ago** | 0.5 | 1.3 | 0.9 | 1.3 | 0.9 | 0.9 | 0.1 | 1.7 | -0.6 | 2.0 | 2.2 | 2.0 | 2.5 | 2.1 | -1.2 | 1.7 | 3.7 | 2.9 |
| **High** | 0.8 | 1.8 | 1.9 | 2.1 | 1.8 | 1.5 | 3.0 | 4.4 | 0.2 | 2.6 | 2.5 | 3.0 | 3.2 | 3.0 | -1.5 | 3.5 | 4.6 | 4.2 |
| **Low** | 0.1 | 0.9 | 0.6 | 1.0 | 0.5 | -0.1 | -0.7 | 0.6 | -3.0 | 0.4 | 2.0 | 1.3 | 2.3 | 1.5 | -5.7 | -4.5 | 3.5 | 2.5 |
| **Standard Deviation** | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.4 | 0.9 | 0.9 | 0.8 | 0.7 | 0.1 | 0.3 | 0.2 | 0.3 | 1.7 | 2.7 | 0.5 | 0.6 |
| **Comparison Forecasts** | | | | | | | | | | | | | | | | | | |
| **Eur Commission (Feb. '24)** | 0.8 | 1.5 | | | | | | | | | 2.7 | 2.2 | | | | | | |
| **ECB (Mar. '24)** | 0.6 | 1.5 | 1.2 | 1.6 | 1.3 | 1.5 | -0.6 | 1.6 | | | 2.3 | 2.0 | | | | | | |
| **IMF (Jan. '24)** | 0.9 | 1.7 | | | | | | | | | | | | | | | | |
| **OECD (Feb. '24)** | 0.6 | 1.3 | | | | | | | | | 2.6 | 2.2 | 2.6 | 2.2 | | | | |

## European Monetary Union

**Euro zone -** The 20 European countries (listed at the top of this page) are united by a common currency (the euro), monetary policy and adherence to the Maastricht Treaty. **Monetary Policy** - is set by the European Central Bank's (ECB) governing board, headed by Christine Lagarde. **Nominal GDP -** Euro 13,406bn (2022). **Population -** 346.7mn (IMF, 2022). **$/Euro** - 1.053 (average, 2022).

## General Government Budget Balance – % of GDP




## Historical Data

| * % change on previous year | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|
| **Gross Domestic Product*** | -6.1 | 5.9 | 3.4 | 0.4 |
| **Private Consumption*** | -7.7 | 4.4 | 4.2 | 0.5 |
| **Government Consumption*** | 1.0 | 4.2 | 1.6 | 0.7 |
| **Gross Fixed Capital Formation*** | -5.9 | 3.5 | 2.5 | 1.1 |
| **Industrial Production*** | -7.6 | 8.7 | 2.0 | -2.2 |
| **Harmonised Consumer Prices (HICP)*** | 0.3 | 2.6 | 8.4 | 5.4 |
| **HICP ex. food, energy, alco. & tob. *** | 0.7 | 1.5 | 4.0 | 4.9 |
| **Industrial Producer Prices*** | -2.6 | 12.2 | 33.4 | -2.2 |
| **Hourly Labour Costs – Total*** | 2.7 | 0.9 | 5.0 | 5.0 |
| **Unemployment Rate, (%)** | 8.0 | 7.7 | 6.7 | 6.5 |
| **Exports - Goods & Services*** | -9.1 | 11.5 | 7.2 | -1.1 |
| **Imports - Goods & Services*** | -8.5 | 9.2 | 7.9 | -1.6 |
| **Current Account, Euro bn** | 206 | 352 | -74 | 267 |
| **General Govt. Budget Balance** (Maastricht definition), **Euro bn** | -814 | -659 | -484 | -491 *e* |
| **Money Supply, M3,** end period* | 12.3 | 7.0 | 3.8 | 0.1 |

*e = consensus estimate based on latest survey*

| Year Average | | Average % Change on Previous Calendar Year | | | | Annual Total | | | | Average % Change on Prev. Year | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Unemployment Rate (%) | | Export of Goods & Services | | Import of Goods & Services | | Current Account (€ bn) | | General Govt Budget Balance (Maastricht) (€ bn) | | Money Supply, M3, end period | |
| 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 |
| 6.5 | 6.3 | 1.3 | 2.5 | 1.4 | 3.0 | 408 | 388 | -469 | -387 | na | na |
| 6.5 | 6.4 | 0.0 | 3.5 | 0.0 | 3.0 | na | na | na | na | na | na |
| 6.7 | 6.7 | na | na | na | na | na | na | na | na | na | na |
| 6.6 | 6.5 | na | na | na | na | na | na | na | na | na | na |
| 6.7 | 6.8 | 0.4 | 2.4 | 1.0 | 2.4 | na | na | na | na | na | na |
| 6.5 | 6.3 | 0.3 | 3.0 | 1.1 | 3.0 | 364 | 394 | -425 | -410 | na | na |
| 6.5 | 6.4 | 0.5 | 2.5 | 1.4 | 2.5 | na | na | na | na | na | na |
| 6.8 | 6.7 | 0.7 | 4.4 | 1.3 | 3.9 | na | na | na | na | na | na |
| 6.6 | 6.7 | 0.6 | 2.5 | 0.3 | 2.6 | 350 | 388 | na | na | 2.2 | 5.7 |
| 6.7 | 6.7 | -0.3 | 1.4 | 0.6 | 1.4 | na | na | -482 | -428 | na | na |
| 6.7 | 6.8 | 0.1 | 2.3 | 1.0 | 2.7 | 328 | 373 | na | na | na | na |
| 6.7 | 6.7 | na | na | na | na | na | na | na | na | na | na |
| 6.5 | 6.5 | 0.9 | 4.4 | 0.2 | 4.1 | 362 | 382 | -405 | -355 | 2.6 | 3.7 |
| 6.6 | 6.6 | -0.4 | 1.9 | -0.3 | 2.0 | na | na | na | na | na | na |
| 6.7 | 6.8 | 0.2 | 2.6 | 0.1 | 3.1 | 472 | 443 | -445 | -389 | 3.1 | 4.7 |
| 6.7 | 6.7 | 0.5 | 3.1 | 1.1 | 3.0 | na | na | na | na | na | na |
| 6.6 | 6.7 | 0.4 | 2.6 | 0.7 | 2.8 | na | na | na | na | na | na |
| 6.7 | 6.8 | 0.1 | 3.2 | 0.9 | 3.8 | na | na | -488 | -445 | na | na |
| 6.6 | 6.5 | 0.5 | 2.9 | 1.2 | 2.0 | 267 | 330 | -429 | -364 | 1.7 | 2.5 |
| 6.6 | 6.9 | -0.1 | 3.7 | 0.2 | 4.3 | 222 | 249 | -462 | -440 | na | na |
| 6.4 | 6.4 | 0.4 | 2.3 | 1.0 | 2.3 | 123 | 125 | -420 | -420 | na | na |
| 7.1 | 7.1 | na | na | na | na | 209 | 219 | -449 | -460 | na | na |
| 6.5 | 6.4 | 0.3 | 3.7 | 1.1 | 3.9 | na | na | na | na | na | na |
| 6.8 | 7.0 | 1.5 | 4.0 | 2.8 | 5.0 | na | na | na | na | na | na |
| 6.7 | 6.9 | na | na | na | na | na | na | na | na | na | na |
| 6.3 | 6.1 | -0.6 | 1.5 | 0.9 | 1.9 | 120 | 128 | -442 | -429 | na | na |
| 6.5 | 6.4 | 0.0 | 2.3 | 0.7 | 2.3 | 334 | 346 | -416 | -369 | na | na |
| 6.7 | 7.1 | 0.1 | 3.1 | 0.8 | 3.3 | na | na | na | na | na | na |
| 6.6 | 6.5 | na | na | na | na | 250 | 250 | na | na | 1.5 | 3.5 |
| 6.6 | 6.6 | 0.3 | 2.9 | 0.8 | 3.0 | 293 | 309 | -444 | -408 | 2.2 | 4.0 |
| 6.6 | 6.6 | 0.5 | 3.0 | 0.9 | 3.2 | 275 | 290 | -420 | -386 | 2.2 | 4.1 |
| 6.8 | 6.8 | 0.5 | 2.8 | 1.0 | 3.0 | 270 | 289 | -418 | -372 | 2.5 | 4.1 |
| 7.1 | 7.1 | 1.5 | 4.4 | 2.8 | 5.0 | 472 | 443 | -405 | -355 | 3.1 | 5.7 |
| 6.3 | 6.1 | -0.6 | 1.4 | -0.3 | 1.4 | 120 | 125 | -488 | -460 | 1.5 | 2.5 |
| 0.1 | 0.2 | 0.5 | 0.8 | 0.6 | 0.9 | 106 | 104 | 27 | 35 | 0.6 | 1.2 |
| 6.7 | 6.6 | 1.0 | 2.9 | 1.0 | 3.1 | | | | | | |

**Euro zone Main Refinancing Rate – April 8, 2024 = 4.50%**

**Average probabilities of a change in the Main Refi Rate on June 6:**

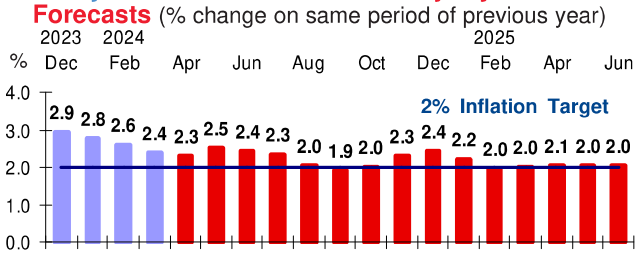
**Increase** 1.4% **No change** 20.0% **Decrease** 78.6%

| Main Refi Rate Consensus | End Jun '24 | End Sep '24 | End Dec '24 | End Mar '25 | End Jun '25 | End Sep '25 | End Dec '25 | End Mar '26 |
|---|---|---|---|---|---|---|---|---|
| Mean Average: | 4.26% | 3.72% | 3.40% | 3.09% | 2.84% | 2.74% | 2.68% | 2.66% |
| Mode (most frequent): | 4.25% | 3.75% | 3.75% | 3.50% | 3.25% | 3.00% | 2.75% | 2.50% |

## Inflation Slows Further, Supporting a June Cut

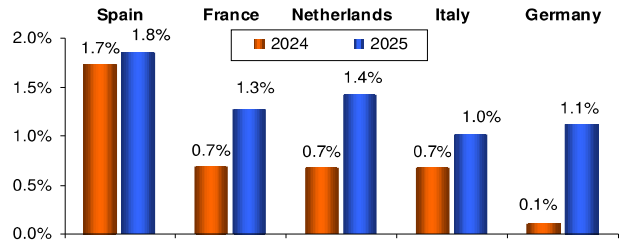
The European Central Bank (ECB) kept rates unchanged at its April 11 meeting. For many, this could be the last pause in monetary conditions before the ECB cuts its interest rates, possibly at its next meeting on June 6. Certainly, European growth was sluggish at the end of last year and going into 2024, especially compared with the more resilient US economy. Recent falls in European stocks underscores market awareness of these differing growth prospects and puts added pressure on the ECB to act. Meanwhile, the HICP came in lower-than-expected at 2.4% (y-o-y) in March vs 2.6% in February. The main downward drivers were a fall in energy prices, while food inflation also declined, despite Easter being earlier this year. Core HICP (which excludes food, energy, alcohol & tobacco prices) fell below 3% for the first time in two years, reaching 2.9%. Services inflation remained elevated at 4% (y-o-y), though, also likely due to Easter. March's services PMI expanded further following an improvement in new orders and output, but the manufacturing PMI hinted at ongoing struggle as new orders dropped further, though at a weaker pace of decline. This highlights the possibility that Euro zone weakness may be bottoming out. The question is whether there is momentum for a more concerted recovery this year. The hope is that growth in H2 2024 will start to pick up on the back of further reductions in borrowing costs by the ECB and the relative resilience of economic growth in Spain and Italy.

**Monthly HICP Inflation Outturns and y-o-y Consensus Forecasts** (% change on same period of previous year)



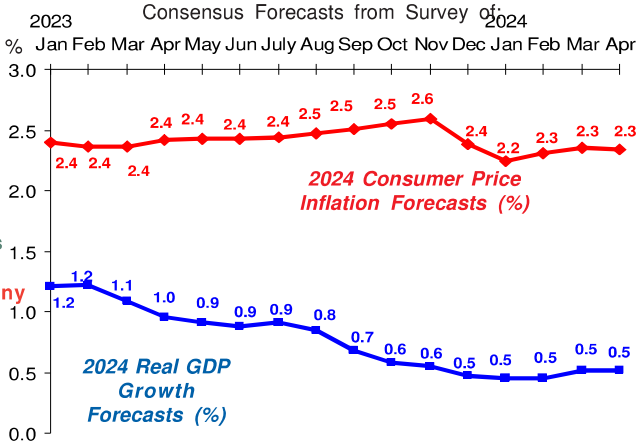

**2024 and 2025 GDP Forecasts for the 'Euro 5'**

Latest Consensus Forecasts Survey:



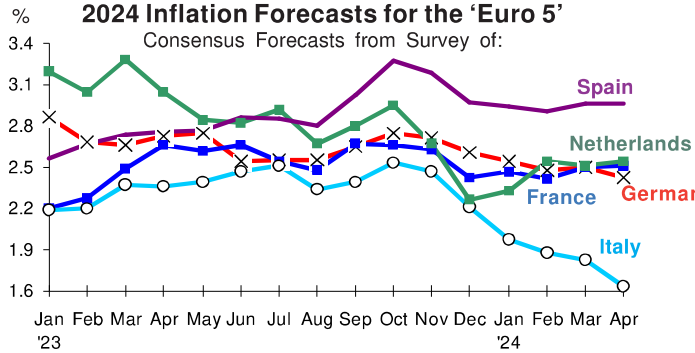

**2024 Euro zone GDP Growth and Inflation Forecasts**

Consensus Forecasts from Survey of:




**2024 Inflation Forecasts for the 'Euro 5'**

Consensus Forecasts from Survey of:



# NETHERLANDS — APRIL 2024

| | Average % Change on Previous Calendar Year | | | | | | | | | | | | Annual Total | | | | Rates on Survey Date | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gross Domestic Product | | Private Con-sumption | | Gross Fixed Investment | | Manufac-turing Produc-tion | | Con-sumer Prices (CPI) | | Hourly Wages (Manu-factur-ing) | | Current Account (€ bn) | | General Govt Bud Balance (Maastricht) (€ bn) | | 3.9% 3 month Euro Rate (%) | | 2.7% 10 Year Dutch Govt Bond Yield (%) | |
| Economic Forecasters | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | End Jul'24 | End Apr'25 | End Jul'24 | End Apr'25 |
| CPB | 1.1 | 1.6 | 2.7 | 2.4 | -2.8 | 2.5 | na | na | 2.9 | 2.8 | na | na | 111.9 | 113.5 | -22.3 | -22.3 | 3.3 | 2.2 | 2.4 | 2.4 |
| Oxford Economics | 1.0 | 2.0 | 2.1 | 1.8 | -2.0 | 4.7 | na | na | 2.5 | 1.9 | 4.2 | 2.5 | 92.8 | 96.2 | -13.9 | -22.1 | 3.2 | 1.9 | 2.5 | 2.4 |
| Econ Intelligence Unit | 0.9 | 1.7 | 1.5 | 1.8 | 1.0 | 3.0 | na | na | 2.4 | 2.1 | na | na | 85.7 | 79.6 | -25.0 | -22.8 | 3.9 | 2.9 | 2.8 | 3.0 |
| S&P Global Market Intel | 0.7 | 1.8 | 1.9 | 1.4 | -3.6 | 1.6 | 0.4 | 1.3 | 2.3 | 1.8 | na | na | 101.5 | 62.6 | -22.8 | -14.4 | 3.7 | 2.6 | 2.7 | 2.6 |
| ABN AMRO | 0.7 | 1.2 | 1.6 | 0.9 | -3.1 | 1.0 | na | na | 2.6 | 2.3 | na | na | 84.2 | 86.2 | na | na | 3.6 | 2.2 | 2.4 | 2.1 |
| Rabobank Nederland | 0.7 | 1.2 | 2.3 | 2.4 | -3.2 | 0.6 | na | na | 2.7 | 1.9 | na | na | na | na | na | na | 3.9 | 3.0 | 2.0 | 1.8 |
| Moody's Analytics | 0.6 | 1.7 | 2.1 | 2.8 | -3.4 | 2.2 | -0.9 | 2.6 | 2.5 | 1.7 | na | na | 106.9 | 109.6 | -20.0 | -25.3 | na | na | na | na |
| Bank of America - Merrill | 0.6 | 1.1 | 1.2 | 0.9 | -2.9 | 1.0 | -1.3 | 2.6 | na | na | na | na | 63.2 | 71.0 | na | na | na | na | na | na |
| Euromonitor Intl | 0.6 | 1.6 | 0.5 | 1.8 | -0.5 | 1.2 | na | na | 2.7 | 2.1 | na | na | 104.5 | 104.5 | -25.0 | na | na | na | na | na |
| S&P Global Ratings | 0.5 | 1.4 | 1.1 | 1.2 | -2.2 | 2.0 | na | na | 2.7 | 2.4 | na | na | na | na | na | na | na | na | na | na |
| FERI | 0.3 | 0.2 | 1.8 | 1.0 | -2.7 | -0.3 | -1.5 | 1.2 | 2.9 | 2.7 | 7.0 | 5.9 | 99.1 | 86.6 | -20.3 | -20.7 | 3.6 | 2.8 | 2.3 | 2.4 |
| Capital Economics | 0.3 | 1.5 | 1.1 | 1.4 | -2.4 | 2.4 | na | na | na | na | na | na | 109.9 | 111.4 | na | na | na | na | na | na |
| Consensus (Mean) | 0.7 | 1.4 | 1.7 | 1.7 | -2.3 | 1.8 | -0.8 | 1.9 | 2.6 | 2.2 | 5.6 | 4.2 | 96.0 | 92.1 | -21.4 | -21.3 | 3.6 | 2.5 | 2.4 | 2.4 |
| Last Month's Mean | 0.7 | 1.4 | 1.4 | 1.7 | -2.0 | 1.6 | -0.4 | 2.1 | 2.5 | 2.2 | 4.4 | 3.0 | 100.0 | 96.8 | -21.8 | -21.3 | | | | |
| 3 Months Ago | 0.5 | 1.6 | 0.4 | 1.7 | -0.6 | 1.7 | 0.3 | 2.2 | 2.3 | 2.2 | 3.9 | 3.0 | 89.3 | 87.8 | -25.1 | -23.3 | | | | |
| High | 1.1 | 2.0 | 2.7 | 2.8 | 1.0 | 4.7 | 0.4 | 2.6 | 2.9 | 2.8 | 7.0 | 5.9 | 111.9 | 113.5 | -13.9 | -14.4 | 3.9 | 3.0 | 2.8 | 3.0 |
| Low | 0.3 | 0.2 | 0.5 | 0.9 | -3.6 | -0.3 | -1.5 | 1.2 | 2.3 | 1.7 | 4.2 | 2.5 | 63.2 | 62.6 | -25.0 | -25.3 | 3.2 | 1.9 | 2.0 | 1.8 |
| Standard Deviation | 0.2 | 0.5 | 0.6 | 0.6 | 1.3 | 1.3 | 0.8 | 0.8 | 0.2 | 0.4 | 2.0 | 2.4 | 14.9 | 17.8 | 3.8 | 3.7 | 0.3 | 0.4 | 0.3 | 0.4 |
| Comparison Forecasts | | | | | | | | | | | | | | | | | | | | |
| De Nederlandsche Bank (Jan. '24) | 0.3 | 1.0 | 0.4 | 0.9 | | | | | | | | | | | | | | | | |
| Eur Commission (Feb. '24) | 0.4 | 1.6 | | | | | | | | | | | | | | | | | | |
| IMF (Oct. '23) | 1.2 | 1.5 | | | | | | | | | | | | | | | | | | |
| OECD (Nov. '23) | 0.5 | 1.1 | 0.2 | 0.8 | -1.8 | 0.2 | | | | | | | | | | | | | | |

- Q4 GDP growth was marginally revised upwards from a flash estimate of 0.3% (q-o-q), now measuring 0.4% as consumption was adjusted higher. Nevertheless, 2024 GDP growth estimates were left unchanged, and are still averaging 0.7% on the back of softer momentum and some companies relocating on the back of concerns over a growing regulatory burden. A €2.5bn infrastructure investment plan was recently announced, in a bid to keep blue-chip companies from moving abroad.

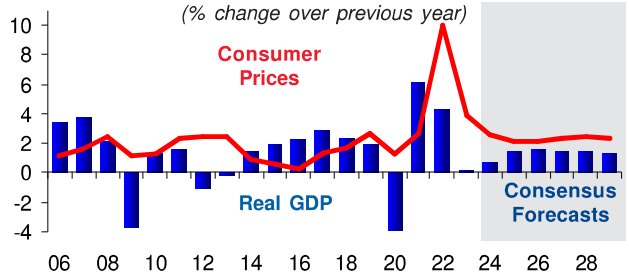
- Corporate concerns have risen about the deteriorating business climate. Since the new parliament took office proposed policies have been focused on the tax-regulation burden and anti-immigration. Meanwhile, Geert Wilders withdrew his bid to become Prime Minister, having agreed to an extra-parliamentary cabinet post instead.

## Historical Data

| * % change on previous year | 2020 | 2021 | 2022 | 2023 | |
|---|---|---|---|---|---|
| Gross Domestic Product* | -3.9 | 6.2 | 4.3 | 0.1 | |
| Private Consumption* | -6.4 | 4.3 | 6.6 | 0.4 | |
| Gross Fixed Investment* | -2.6 | 2.9 | 1.8 | 2.0 | |
| Manufacturing Production* | -3.0 | 7.2 | 7.8 | -2.5 | |
| Consumer Prices* | 1.3 | 2.7 | 10.0 | 3.8 | |
| Hourly Wages (manufacturing)* | 2.9 | 2.1 | 3.5 | 7.6 | |
| Current Account, Transactions basis, Euro bn | 41.0 | 105.5 | 88.9 | 104.4 | |
| General Govt. Budget Balance (Maastricht definition), Euro bn | -29.6 | -20.3 | 0.1 | -9.2 | e |
| 3 mth Euro, % (end year) | -0.5 | -0.6 | 2.1 | 3.9 | |
| 10 Yr Dutch Govt Bond Yield % (end year) | -0.5 | 0.0 | 2.9 | 2.3 | |

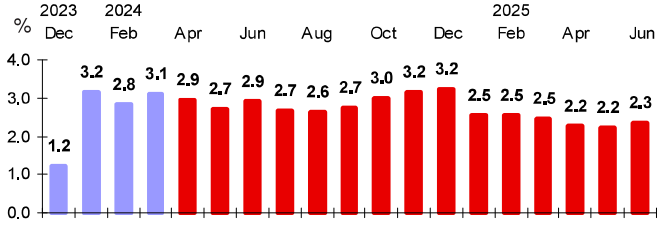
**Nominal GDP -** Euro 958.5bn (2022). **Popn -** 17.6mn (IMF, 2022). **$/Euro Exch. Rate -** 1.053 (average, 2022).

### Real Growth and Inflation (2005-2028)




### Monthly CPI Outturns and y-o-y Consensus Forecasts

*(% change on the same period of the previous year)*



# APRIL 2024 NORWAY

| | Average % Change on Previous Calendar Year | | | | | | | | | | | | | | Annual Total | | Rates on Survey Date | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gross Domestic Product (Mainland) | | Gross Domestic Product (Total) | | Private Consumption | | Gross Fixed Investment | | Manufacturing Production | | Consumer Prices | | Wages & Salaries | | Current Account (Nkr bn) | | 4.7% 3 month Interbank Rate (%) | | 3.8% 10 Year Govt Bond Yield (%) | |
| Economic Forecasters | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | End Jul'24 | End Apr'25 | End Jul'24 | End Apr'25 |
| Econ Intelligence Unit | na | na | 1.0 | 1.5 | 0.6 | 1.0 | 0.4 | 0.6 | na | na | 2.6 | 2.0 | 3.3 | 2.8 | 761 | 726 | 5.8 | 2.5 | 3.2 | 2.9 |
| Fitch Ratings | na | na | 1.2 | 1.4 | na | na | na | na | na | na | 3.8 | 2.3 | na | na | 1082 | 827 | na | na | na | na |
| S&P Global Market Intel | na | na | 1.8 | 2.4 | 1.6 | 2.1 | 0.0 | 3.0 | na | na | 3.3 | 1.9 | na | na | 1174 | 1139 | 4.6 | 3.8 | 3.5 | 3.3 |
| HSBC | 1.0 | 1.2 | na | na | 1.4 | 1.0 | na | na | 1.8 | 3.5 | 3.7 | 2.5 | na | na | na | na | na | na | na | na |
| NHO Conf Nor Enterprise | 0.9 | 1.1 | 0.8 | 2.2 | 1.4 | 2.5 | -5.1 | -3.5 | na | na | na | 3.3 | na | na | na | na | na | na | na | na |
| Statistics Norway | 0.8 | 1.8 | 2.7 | 1.8 | 0.2 | 2.2 | -1.6 | 0.2 | 0.7 | 5.2 | 4.0 | 2.7 | 5.4 | 3.9 | 846 | 923 | na | na | na | na |
| FERI | 0.6 | 0.8 | 1.2 | 0.7 | 1.6 | 1.0 | 1.2 | 1.2 | 0.6 | 1.5 | 3.7 | 2.5 | 4.2 | 2.7 | 864 | 878 | 4.6 | 4.1 | 3.5 | 3.4 |
| UniCredit | 0.6 | 1.0 | 0.7 | 1.2 | 1.0 | 1.0 | 1.0 | 2.0 | na | na | 3.5 | 2.0 | na | na | na | na | na | na | na | na |
| Citigroup | 0.5 | 1.8 | na | na | 1.0 | 1.1 | -1.8 | 1.3 | na | na | 2.9 | 2.1 | na | na | 511 | 513 | 4.3 | 2.5 | 3.9 | 2.8 |
| Capital Economics | 0.5 | 1.3 | na | na | 1.1 | 1.7 | na | na | na | na | 3.3 | 2.0 | na | na | na | na | na | na | na | na |
| Oxford Economics | 0.5 | 1.9 | na | na | 0.7 | 2.4 | -4.1 | 3.6 | 1.2 | 1.9 | 3.5 | 2.2 | 5.1 | 3.5 | 686 | 569 | 4.7 | 4.1 | 3.5 | 3.3 |
| Moody's Analytics | -0.7 | 1.4 | na | na | -0.1 | 2.1 | 0.8 | -1.4 | na | na | 3.5 | 1.8 | -0.9 | 2.3 | 737 | 632 | na | na | na | na |
| Consensus (Mean) | 0.5 | 1.4 | 1.3 | 1.6 | 1.0 | 1.7 | -1.0 | 0.8 | 1.1 | 3.0 | 3.4 | 2.3 | 3.4 | 3.0 | 833 | 776 | 4.8 | 3.4 | 3.5 | 3.1 |
| Last Month's Mean | 0.6 | 1.4 | 1.0 | 1.6 | 0.9 | 1.7 | -1.1 | 0.8 | 1.3 | 2.2 | 3.5 | 2.3 | 3.6 | 3.4 | 807 | 744 | | | | |
| 3 Months Ago | 0.6 | 1.5 | 1.1 | 1.7 | 0.9 | 1.7 | -1.0 | 1.3 | 1.2 | 2.5 | 3.3 | 2.3 | 4.3 | 3.5 | 806 | 742 | | | | |
| High | 1.0 | 1.9 | 2.7 | 2.4 | 1.6 | 2.5 | 1.2 | 3.6 | 1.8 | 5.2 | 4.0 | 3.3 | 5.4 | 3.9 | 1174 | 1139 | 5.8 | 4.1 | 3.9 | 3.4 |
| Low | -0.7 | 0.8 | 0.7 | 0.7 | -0.1 | 1.0 | -5.1 | -3.5 | 0.6 | 1.5 | 2.6 | 1.8 | -0.9 | 2.3 | 511 | 513 | 4.3 | 2.5 | 3.2 | 2.8 |
| Standard Deviation | 0.5 | 0.4 | 0.7 | 0.6 | 0.6 | 0.6 | 2.3 | 2.2 | 0.5 | 1.7 | 0.4 | 0.4 | 2.6 | 0.7 | 213 | 207 | 0.6 | 0.8 | 0.2 | 0.3 |
| Comparison Forecasts | | | | | | | | | | | | | | | | | | | | |
| Norges Bank (Apr. '24) | 0.5 | 1.2 | 0.4 | 1.8 | 1.0 | 2.1 | | | | | 3.8 | 2.7 | | | | | | | | |
| Min. of Finance (Oct. '23) | 0.8 | 1.9 | | | | | | | | | 3.8 | 2.5 | | | | | | | | |
| IMF (Oct. '23) | | | 1.5 | 1.2 | | | | | | | 3.7 | 2.6 | | | | | | | | |
| OECD (Nov. '23) | 0.5 | 1.3 | 0.7 | 1.5 | 0.6 | 1.2 | -0.9 | 1.3 | | | 3.9 | 3.2 | | | | | | | | |

*Individual forecasts available in Excel

Consensus*

| General Govt Budget Balance (Nkr bn) | |
|---|---|
| 2024 | 2025 |
| *601.6* | *473.8* |

- The Norges Bank held its policy rate at 4.5% on March 21, having indicated that rates will remain higher for longer than its European peers this year. Governor Ida Wolden Bache signalled an autumn rate cut, with a second cut by end-March 2025.

- Risks are tilted to the upside as CPI concerns persist amid a weak currency. The krone remains under pressure as foreign interest rates are also currently at a peak, for longer than markets anticipated, and oil prices have fluctuated. Inflation stood at 3.9% (y-o-y) in March, easing from 4.7% in February. Nonetheless, the krone strengthened from a four-month low at the start of April, on the back of rising oil prices which are expected to accelerate further as OPEC+ tighten supply in Q2.

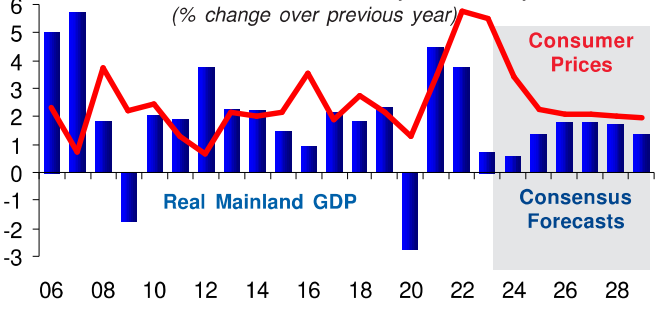
## Historical Data

| * % change on previous year | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|
| GDP (Mainland)* | -2.8 | 4.5 | 3.7 | 0.7 |
| GDP (Total)* | -1.3 | 3.9 | 3.0 | 0.5 |
| Private Consumption* | -6.4 | 5.1 | 5.9 | -0.9 |
| Gross Fixed Investment* | -4.1 | 0.7 | 5.2 | 0.3 |
| Manufacturing Production* | -3.1 | 3.2 | -0.3 | -0.3 |
| Consumer Prices* | 1.3 | 3.5 | 5.8 | 5.5 |
| Wages & Salaries per Full-Time Employee (Total)* | 2.7 | 3.4 | 4.2 | 5.7 |
| Current Account, Nkr bn | 38.2 | 644 | 1722 | 909 |
| General Govt. Bud Bal, Nkr bn | -89 | 445 | 1459 | 837 |
| 3 mth Interbank Rate, % End yr | 0.5 | 1.0 | 3.3 | 4.7 |
| 10 Yr Govt Bond Yield, % End yr | 0.9 | 1.7 | 3.2 | 3.3 |

**Nominal GDP (total) -** Nkr 5,571bn (2022). **Population -** 5.5mn (IMF, 2022). **Nkr/$ Exchange Rate -** 9.595 (average, 2022).

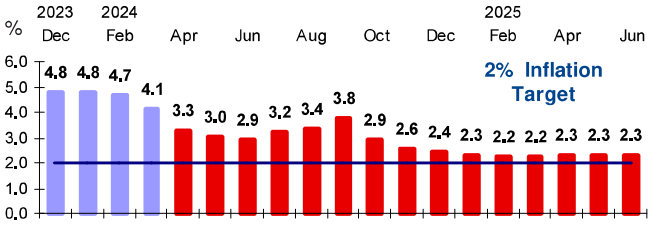
**Real Growth and Inflation (2005-2028)**

*(% change over previous year)*




**Monthly CPI Outturns and y-o-y Consensus Forecasts**

*(% change on the same period of the previous year)*



# SPAIN — APRIL 2024

| | Average % Change on Previous Calendar Year | | | | | | | | | | | | Annual Total | | | | Rates on Survey Date | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gross Domestic Product | | House-hold Con-sumption | | Gross Fixed Invest-ment | | Industrial Produc-tion | | Con-sumer Prices (CPI) | | Salary Cost per Hour | | Current Account (€ bn) | | General Govt Bud Balance (Maastricht) (€ bn) | | 3.9% | | 3.2% | |
| | | | | | | | | | | | | | | | | | 3 month Euro Rate (%) | | 10 Year Spanish Govt Bond Yield (%) | |
| Economic Forecasters | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | End Jul'24 | End Apr'25 | End Jul'24 | End Apr'25 |
| Oxford Economics | 2.2 | 1.7 | 1.8 | 1.7 | 1.5 | 5.3 | 1.3 | 1.5 | 3.3 | 2.0 | 2.8 | 2.0 | 54.8 | 56.1 | -47.7 | -47.7 | 3.2 | 1.9 | 3.2 | 3.2 |
| CEPREDE | 2.1 | 2.4 | 1.7 | 1.4 | 6.6 | 5.1 | na | na | 2.9 | 2.4 | 4.1 | 3.9 | 15.4 | 11.8 | -70.5 | -76.6 | 3.3 | 2.8 | 3.0 | 2.5 |
| BBVA | 2.1 | 2.0 | 2.0 | 1.7 | 3.1 | 7.3 | na | na | 3.1 | 2.3 | na | na | 49.7 | 45.5 | -56.6 | -47.4 | 3.7 | 3.0 | 3.4 | 3.4 |
| Bloomberg Economics | 2.0 | 1.8 | 2.4 | 1.8 | 3.5 | 3.1 | na | na | 2.4 | 1.8 | 4.3 | 3.3 | na | na | na | na | na | na | na | na |
| Moody's Analytics | 2.0 | 2.0 | 1.9 | 2.8 | 2.5 | 6.2 | 1.2 | 0.7 | 2.6 | 2.0 | na | na | 35.1 | 32.8 | -57.2 | -53.2 | na | na | na | na |
| Goldman Sachs | 1.9 | 1.7 | 3.5 | 1.7 | 1.2 | 2.7 | na | na | 3.3 | 2.3 | na | na | na | na | -46.3 | -42.7 | na | na | na | na |
| La Caixa | 1.9 | 2.2 | 2.3 | 2.3 | 0.6 | 3.1 | 1.7 | 1.8 | 3.0 | 2.5 | 3.4 | 2.6 | 35.2 | 39.8 | -52.2 | -46.7 | 3.2 | 2.5 | 3.1 | 2.9 |
| FUNCAS | 1.8 | 2.0 | 1.8 | 1.6 | 1.1 | 2.5 | 2.1 | 2.6 | 3.1 | 2.5 | na | na | 39.9 | 35.5 | -49.3 | -47.4 | 3.6 | 3.0 | 3.0 | 2.8 |
| Fitch Ratings | 1.8 | 2.0 | 1.7 | 1.7 | 0.9 | 2.7 | na | na | 3.0 | 2.4 | na | na | 24.5 | 26.4 | -50.9 | -51.0 | na | na | na | na |
| AFI | 1.8 | 1.8 | 2.0 | 1.3 | 1.6 | 2.5 | na | na | 3.2 | 2.2 | na | na | 10.5 | 20.8 | -46.1 | -48.3 | 3.7 | 2.8 | 3.3 | 3.2 |
| CEOE | 1.8 | 2.0 | 1.5 | 1.7 | 1.1 | 1.6 | na | na | 3.1 | 2.2 | na | na | 23.2 | 27.8 | -52.7 | -52.4 | 3.5 | 3.0 | 3.1 | 3.0 |
| Rabobank | 1.8 | 1.9 | 1.8 | 1.3 | 0.9 | 4.4 | na | na | 3.0 | 2.3 | na | na | na | na | na | na | na | na | na | na |
| S&P Global Ratings | 1.8 | 1.9 | 2.1 | 2.0 | 0.7 | 4.0 | na | na | 3.0 | 2.0 | na | na | na | na | na | na | na | na | na | na |
| Grupo Santander | 1.7 | 2.0 | 2.1 | 1.9 | 1.8 | 5.2 | na | na | 2.9 | 2.3 | 3.3 | 2.0 | na | na | na | na | 3.4 | 2.7 | 3.4 | 3.5 |
| Econ Intelligence Unit | 1.7 | 1.9 | 1.9 | 1.9 | 1.5 | 3.3 | 0.5 | 1.7 | 2.9 | 2.1 | na | na | 26.9 | 29.9 | -53.2 | -51.7 | 3.9 | 2.9 | 3.2 | 3.2 |
| HSBC | 1.7 | 1.6 | 1.9 | 1.5 | 0.2 | 2.9 | 0.8 | 1.8 | na | na | na | na | na | na | na | na | na | na | na | na |
| Inst Estud Economicos | 1.7 | 1.9 | 1.4 | 1.5 | 1.3 | 2.4 | na | na | 3.1 | 2.5 | 3.6 | 3.0 | 22.0 | 26.6 | -59.8 | -54.8 | 3.6 | 2.8 | 3.1 | 2.9 |
| Societe Generale CIB | 1.7 | 1.5 | 1.7 | 1.4 | -1.4 | 1.6 | na | na | 3.1 | 1.7 | na | na | 29.5 | 31.0 | -42.4 | -40.8 | na | na | na | na |
| Citigroup | 1.7 | 1.4 | 1.5 | 1.0 | 1.6 | 3.2 | na | na | 2.9 | 2.0 | na | na | 23.3 | 28.3 | -42.5 | -44.1 | na | na | 2.9 | 2.7 |
| Bank of America - Merrill | 1.6 | 1.5 | 1.7 | 1.4 | -0.7 | 1.6 | 1.0 | 2.1 | 2.6 | 1.1 | na | na | 31.6 | 31.6 | na | na | na | na | na | na |
| Natixis | 1.6 | 2.0 | 1.8 | 1.4 | -0.7 | 2.9 | na | na | 2.9 | 2.1 | na | na | na | na | na | na | na | na | na | na |
| Repsol | 1.5 | 2.3 | 2.0 | 2.1 | 2.4 | 2.4 | 0.5 | 1.5 | 3.1 | 2.5 | 3.2 | 2.5 | 12.2 | 18.3 | -42.7 | -36.6 | 3.8 | 3.2 | 3.1 | 3.0 |
| Capital Economics | 1.5 | 1.7 | 2.0 | 2.1 | -1.7 | 1.0 | na | na | na | na | na | na | 53.6 | 55.9 | -46.0 | -51.1 | na | na | na | na |
| UniCredit | 1.5 | 1.5 | 1.6 | 1.8 | -1.5 | 2.4 | na | na | na | na | na | na | na | na | -50.7 | -47.9 | na | na | na | na |
| UBS | 1.5 | 1.9 | 2.0 | 1.7 | 2.5 | 2.6 | na | na | na | na | na | na | 16.9 | 19.3 | na | na | na | na | na | na |
| Euromonitor Intl | 1.3 | 1.8 | 1.8 | 1.8 | 2.0 | 3.0 | 0.6 | 0.6 | 2.7 | 2.1 | na | na | 62.2 | 62.2 | -57.5 | na | na | na | na | na |
| S&P Global Market Intel | 1.2 | 1.4 | 1.3 | 1.5 | -1.0 | 3.8 | 0.9 | 2.0 | 2.9 | 2.0 | na | na | 40.8 | 41.8 | -55.5 | -48.1 | 3.7 | 2.6 | 3.5 | 3.6 |
| **Consensus (Mean)** | 1.7 | 1.8 | 1.9 | 1.7 | 1.2 | 3.3 | 1.1 | 1.6 | 3.0 | 2.1 | 3.5 | 2.8 | 32.0 | 33.8 | -51.6 | -49.4 | 3.6 | 2.8 | 3.2 | 3.1 |
| Last Month's Mean | 1.6 | 1.8 | 1.9 | 1.7 | 1.2 | 3.3 | 0.8 | 1.7 | 3.0 | 2.2 | 3.4 | 2.8 | 31.6 | 33.9 | -52.5 | -48.9 | | | | |
| 3 Months Ago | 1.3 | 1.8 | 1.8 | 1.7 | 1.8 | 3.4 | 0.5 | 1.8 | 2.9 | 2.1 | 3.2 | 2.8 | 28.6 | 31.3 | -53.5 | -49.8 | | | | |
| High | 2.2 | 2.4 | 3.5 | 2.8 | 6.6 | 7.3 | 2.1 | 2.6 | 3.3 | 2.5 | 4.3 | 3.9 | 62.2 | 62.2 | -42.4 | -36.6 | 3.9 | 3.2 | 3.5 | 3.6 |
| Low | 1.2 | 1.4 | 1.3 | 1.0 | -1.7 | 1.0 | 0.5 | 0.6 | 2.4 | 1.1 | 2.8 | 2.0 | 10.5 | 11.8 | -70.5 | -76.6 | 3.2 | 1.9 | 2.9 | 2.5 |
| Standard Deviation | 0.2 | 0.3 | 0.4 | 0.4 | 1.8 | 1.5 | 0.5 | 0.6 | 0.2 | 0.3 | 0.5 | 0.7 | 15.0 | 13.6 | 7.1 | 8.2 | 0.2 | 0.3 | 0.2 | 0.3 |
| Comparison Forecasts | | | | | | | | | | | | | | | | | | | | |
| Banco de Espana (Mar. '24) | 1.9 | 1.9 | 2.3 | 1.9 | 0.4 | 2.7 | | | | | | | | | | | | | | |
| Government (Oct. '23) | 2.0 | | 2.5 | | | | | | | | | | | | | | | | | |
| Eur Commission (Feb. '24) | 0.4 | 1.6 | | | | | | | | | | | | | | | | | | |
| IMF (Jan. '24) | 1.5 | 2.1 | | | | | | | | | | | | | | | | | | |
| OECD (Feb. '24) | 1.5 | 2.0 | | | | | | | 3.3 | 2.5 | | | | | | | | | | |

- Final GDP estimates affirm growth of 0.6% (q-o-q) in Q4, and 2.5% in 2023 overall, exceeding expectations. Strong domestic demand bolstered growth throughout 2023, but household spending expanded by only 0.2% (q-o-q) in Q4 after a 1.2% rise in Q3. Gross fixed investment continued to contract, having measured -1.6% (q-o-q) in Q4, but expanded y-o-y by +2.1%, following rollout of EU funds. Interest-rate-sensitive sectors like manufacturing and construction surprisingly grew by 1.1% and 1.2% (q-o-q).

- The domestic CPI accelerated from 2.8% (y-o-y) in February to 3.2% in March. VAT rates on electricity bills were raised from 10% to 21% while fuel prices saw an increase. Meanwhile, core CPI ebbed from 3.4% to 3.3%.

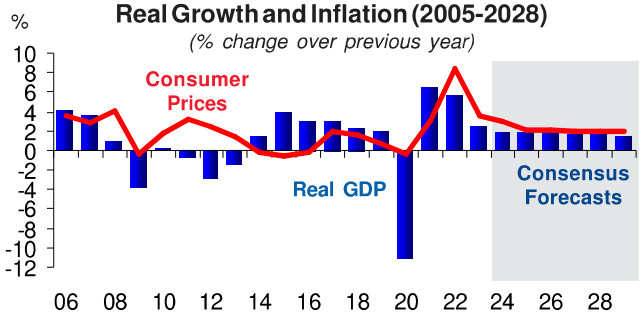
## Historical Data

| * % change on previous year | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|
| Gross Domestic Product* | -11.2 | 6.4 | 5.8 | 2.5 |
| Household Consumption* | -12.4 | 7.2 | 4.8 | 1.8 |
| Gross Fixed Investment* | -9.0 | 2.8 | 2.4 | 0.8 |
| Industrial Production* | -10.1 | 8.1 | 1.9 | -0.7 |
| Consumer Prices* | -0.3 | 3.1 | 8.4 | 3.5 |
| Salary Cost per Hour* | 6.0 | -0.2 | 2.3 | 5.0 |
| Current Account, Euro bn | 6.9 | 9.3 | 8.2 | 38.0 |
| General Govt. Budget Balance (Maastricht definition), Euro bn | -113 | -82.3 | -63.7 | -56.1 e |
| 3 mth Euro, % (end year) | -0.5 | -0.6 | 2.1 | 3.9 |
| 10 Yr Govt Bond Yield % (end year) | 0.0 | 0.6 | 3.7 | 3.0 |

**Nominal GDP -** Euro 1,327bn (2022). **Popn -** 47.6mn (IMF, 2022). **$/Euro Exch. Rate -** 1.053 (average, 2022).

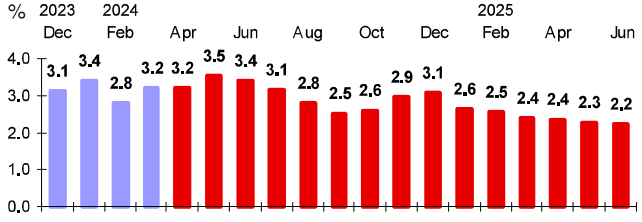
### Real Growth and Inflation (2005-2028)

*(% change over previous year)*




### Monthly CPI Outturns and y-o-y Consensus Forecasts

*(% change on the same period of the previous year)*



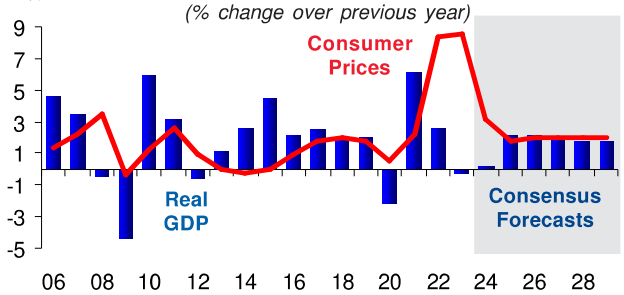
# APRIL 2024 SWEDEN

| | Average % Change on Previous Calendar Year | | | | | | | | | | | | Annual Total | | | | Rates on Survey Date | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gross Domestic Product | | House-hold Con-sumption | | Gross Fixed Invest-ment | | Mining & Manu-facturing Produc-tion | | Con-sumer Prices (CPI) | | Hourly Earnings (Mining & Manuf.) | | Current Account (SEK bn) | | General Govt Budget Balance (SEK bn) | | 4.0% | | 2.5% | |
| | | | | | | | | | | | | | | | | | 3 month Interbank Rate (%) | | 10 Year Govt Bond Yield (%) | |
| Economic Forecasters | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | End Jul'24 | End Apr'25 | End Jul'24 | End Apr'25 |
| National Institute - NIER | 0.8 | 2.5 | 1.4 | 3.2 | -2.4 | 1.7 | -0.3 | 4.0 | 2.8 | 0.3 | 3.8 | 3.6 | 419 | 416 | -83.0 | -46.0 | na | na | 2.4 | 2.5 |
| HSBC | 0.6 | 2.6 | 0.7 | 2.1 | 0.2 | 4.1 | 0.6 | 2.0 | 3.1 | 2.5 | na | na | na | na | na | na | na | na | na | na |
| Econ Intelligence Unit | 0.4 | 2.1 | 1.2 | 1.8 | -1.2 | 3.0 | 1.0 | 2.0 | 2.7 | 2.0 | na | na | 386 | 381 | -43.0 | -14.2 | 4.1 | 3.7 | 2.3 | 2.3 |
| Moody's Analytics | 0.4 | 2.3 | na | na | -2.3 | 2.0 | na | na | 3.9 | 2.3 | na | na | 307 | 314 | na | na | na | na | na | na |
| S&P Global Market Intel | 0.3 | 2.2 | 1.1 | 2.0 | -1.4 | 2.8 | na | na | 2.8 | 1.6 | na | na | 307 | 323 | -84.4 | -45.9 | 3.9 | 2.7 | 2.6 | 2.5 |
| UniCredit | 0.3 | 1.6 | 0.5 | 1.5 | 0.5 | 1.6 | na | na | na | na | na | na | na | na | na | na | na | na | na | na |
| Oxford Economics | 0.2 | 1.6 | 0.8 | 1.5 | -0.2 | 2.3 | 1.8 | 2.2 | 3.2 | 2.0 | 4.0 | 3.1 | 277 | 269 | -59.2 | -47.4 | 3.8 | 2.8 | 2.3 | 2.4 |
| Capital Economics | 0.2 | 1.7 | 0.6 | 1.5 | -1.4 | 1.9 | na | na | na | na | na | na | na | na | -41.7 | -11.9 | na | na | na | na |
| Confed of Swed Enterprise | 0.2 | 2.0 | 0.7 | 1.5 | -2.2 | 2.8 | na | na | na | na | na | na | na | na | na | na | na | na | na | na |
| Svenska Handelsbanken | 0.1 | 2.4 | 0.0 | 2.4 | -1.3 | 3.5 | na | na | 3.6 | 1.9 | 3.9 | 3.8 | na | na | -89.0 | -71.0 | 3.8 | 2.9 | 2.4 | 2.6 |
| Euromonitor Intl | 0.1 | 2.0 | 0.6 | 2.5 | 0.0 | 1.7 | na | na | 3.2 | 2.3 | na | na | 441 | 441 | -87.9 | na | na | na | na | na |
| SE Banken | 0.1 | 2.8 | 1.4 | 3.2 | -3.0 | 4.0 | na | na | 3.0 | 1.4 | 3.7 | 3.5 | 407 | 359 | na | na | 3.6 | 2.7 | 2.4 | 2.4 |
| Swedbank | 0.0 | 2.8 | 0.2 | 3.4 | -2.8 | 2.0 | na | na | 3.1 | 0.9 | 3.7 | 3.5 | na | na | na | na | na | na | na | na |
| Morgan Stanley | -0.2 | 1.3 | -0.2 | 0.9 | na | na | na | na | 3.4 | 2.0 | na | na | na | na | na | na | na | na | na | na |
| Citigroup | -0.3 | 1.1 | -0.2 | 1.0 | -1.6 | 1.4 | na | na | na | na | na | na | 386 | 428 | na | na | 3.8 | 1.8 | 2.0 | 1.9 |
| Consensus (Mean) | 0.2 | 2.1 | 0.6 | 2.0 | -1.4 | 2.5 | 0.8 | 2.6 | 3.2 | 1.7 | 3.8 | 3.5 | 366 | 366 | -69.8 | -39.4 | 3.8 | 2.7 | 2.3 | 2.4 |
| Last Month's Mean | 0.2 | 2.0 | 0.5 | 2.0 | -1.1 | 2.5 | 1.2 | 2.8 | 3.2 | 1.8 | 3.8 | 3.5 | 370 | 369 | -98.4 | -72.9 | | | | |
| 3 Months Ago | 0.1 | 2.0 | 0.6 | 1.9 | -0.9 | 2.2 | 1.3 | 3.1 | 3.3 | 1.9 | 3.8 | 3.4 | 325 | 341 | -63.8 | -34.2 | | | | |
| High | 0.8 | 2.8 | 1.4 | 3.4 | 0.5 | 4.1 | 1.8 | 4.0 | 3.9 | 2.5 | 4.0 | 3.8 | 441 | 441 | -41.7 | -11.9 | 4.1 | 3.7 | 2.6 | 2.6 |
| Low | -0.3 | 1.1 | -0.2 | 0.9 | -3.0 | 1.4 | -0.3 | 2.0 | 2.7 | 0.3 | 3.7 | 3.1 | 277 | 269 | -89.0 | -71.0 | 3.6 | 1.8 | 2.0 | 1.9 |
| Standard Deviation | 0.3 | 0.5 | 0.5 | 0.8 | 1.1 | 0.9 | 0.9 | 1.0 | 0.3 | 0.7 | 0.1 | 0.2 | 61 | 61 | 21.2 | 22.5 | 0.2 | 0.6 | 0.2 | 0.2 |
| Comparison Forecasts | | | | | | | | | | | | | | | | | | | | |
| Riksbank (Mar. '24) | 0.3 | 1.9 | 2.0 | 2.3 | -2.9 | 1.9 | | | 3.5 | 1.5 | | | | | | | | | | |
| Government (Dec. '23) | 0.6 | 2.7 | 0.6 | 3.5 | -0.8 | 2.6 | | | 3.9 | 1.4 | | | | | | | | | | |
| Eur Commission (Feb. '24) | 0.2 | 1.6 | | | | | | | | | | | | | | | | | | |
| IMF (Oct. '23) | 0.6 | 2.4 | | | | | | | | | | | | | | | | | | |
| OECD (Nov. '23) | 0.9 | 2.6 | 0.6 | 2.5 | 0.5 | 3.4 | | | 3.8 | 2.2 | | | | | | | | | | |

◈ As expected, the Riksbank kept its policy rate at 4% at its March 27 meeting. However, policymakers made substantial changes to forward guidance, heightening the probability of an interest rate cut as early as at the next meeting on May 7. The meeting minutes noted that "if the inflation prospects remain favourable, the policy rate may well be cut in May or June". Central bank policymakers also downgraded their CPI forecasts to 3.5% in 2024 and 1.5% in 2025, respectively. CPIF forecasts saw no change in 2024 at 2.3%, while 2025 was upgraded to 1.9%. However, there are potential upside risks to inflation from supply shocks (trade disruptions) and ongoing krona weakness, although quarterly policy rate forecasts suggest several cuts to come this year.

**Real Growth and Inflation (2005-2028)**

*(% change over previous year)*



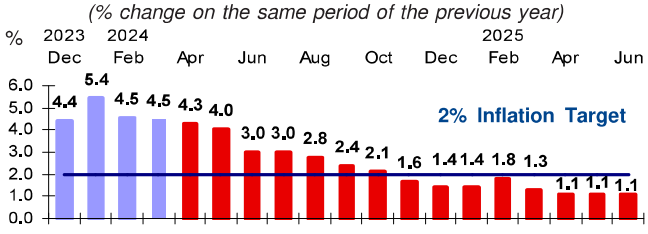

## Historical Data

| * % change on previous year | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|
| Gross Domestic Product* | -2.2 | 6.1 | 2.7 | -0.2 |
| Household Consumption* | -3.2 | 6.3 | 2.3 | -2.5 |
| Gross Fixed Investment* | 1.7 | 7.1 | 6.2 | -1.5 |
| Min. & Manufacturing Prodn* | -5.2 | 7.4 | 2.3 | 1.3 |
| Consumer Prices* | 0.5 | 2.2 | 8.4 | 8.5 |
| Average Hourly Earnings (Mining & Manufacturing)* | 1.0 | 2.6 | 2.4 | 3.8 |
| Current Account, SEK bn | 295 | 388 | 323 | 426 |
| General Govt. Bud Bal, SEK bn | -142 | 0.0 | 70.4 | -34.2 |
| 3 mth Interbank Rate, % (end year) | 0.0 | 0.0 | 2.7 | 4.1 |
| 10 Yr Govt Bond Yield % (end year) | 0.0 | 0.2 | 2.4 | 2.1 |

**Nominal GDP** - Skr 5,693bn (2022). **Population** - 10.5mn (IMF, 2022). **Skr/$ Exchange Rate** - 10.093 (average, 2022).

**Monthly CPI Outturns and y-o-y Consensus Forecasts**

*(% change on the same period of the previous year)*



# SWITZERLAND — APRIL 2024

| | Average % Change on Previous Calendar Year | | | | | | | | | | | | Annual Total | | | | Rates on Survey Date | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gross Domestic Product | | GDP, Sports Event Adjusted | | Private Consump-tion | | Gross Fixed Invest-ment | | Industrial Production | | Consumer Prices | | Merchan-dise Exports (SwFrbn) | | Current Account (SwFrbn) | | 1.3% 3 month Swiss Av. Rate (SAR3M) (%) | | 0.7% 10 Year Govt Bond Yield (%) | |
| Economic Forecasters | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | 2024 | 2025 | End Jul'24 | End Apr'25 | End Jul'24 | End Apr'25 |
| Zürcher Kantonalbank | 2.0 | 1.5 | 1.5 | 1.8 | 1.3 | 1.4 | -1.1 | 2.2 | 3.9 | 3.5 | 1.3 | 1.4 | 283 | 299 | 71.9 | 75.1 | 1.5 | 1.5 | 1.0 | 1.0 |
| KOF Swiss Econ Inst | 1.6 | 1.4 | 1.2 | 1.8 | 1.2 | 1.5 | -1.0 | 3.9 | na | na | 1.6 | 1.1 | 263 | 271 | 72.8 | 68.6 | 1.5 | 1.0 | 0.9 | 1.1 |
| Luzerner Kantonalbank | 1.5 | 1.8 | na | na | 1.4 | 1.7 | -0.9 | 3.0 | na | na | 1.2 | 1.0 | na | na | na | na | 1.1 | 1.0 | 0.8 | 0.8 |
| Oxford - BAK | 1.4 | 1.5 | 1.1 | 1.8 | 1.1 | 1.7 | 0.4 | 3.4 | 1.0 | 3.1 | 1.5 | 0.9 | na | na | 61.8 | 68.0 | 1.4 | 0.8 | 1.1 | 1.2 |
| Goldman Sachs | 1.3 | 1.8 | na | na | na | na | na | na | 3.5 | 3.2 | 1.3 | 1.5 | na | na | na | na | na | na | na | na |
| UBS | 1.3 | 1.5 | 1.0 | 1.6 | 1.1 | 1.2 | -1.5 | 1.7 | na | na | 1.4 | 1.2 | na | na | na | na | 1.3 | 1.0 | 0.7 | 0.7 |
| Bank Julius Baer | 1.2 | 1.6 | na | na | 1.0 | 1.7 | -1.0 | 4.1 | 1.1 | 2.1 | 1.3 | 1.0 | na | na | na | na | 1.3 | 1.0 | 0.8 | 1.0 |
| Swiss Life Asset Mgrs | 1.2 | 1.0 | 0.9 | 1.4 | 0.8 | 1.0 | 1.0 | 2.5 | na | na | 1.1 | 0.7 | na | na | na | na | 1.3 | 1.1 | 0.8 | 0.9 |
| Fitch Ratings | 1.2 | 1.7 | na | na | 1.4 | 1.4 | -1.0 | 1.4 | na | na | 1.2 | 1.1 | na | na | 72.7 | 73.9 | na | na | na | na |
| Capital Economics | 1.1 | 2.0 | na | na | 1.2 | 1.8 | -2.6 | 1.1 | na | na | 1.2 | 0.8 | na | na | 81.4 | 79.0 | na | na | na | na |
| HSBC | 1.1 | 1.5 | na | na | 1.1 | 1.3 | -1.9 | 2.3 | -0.2 | 2.2 | 1.3 | 1.1 | na | na | 69.0 | 69.8 | 1.1 | 0.9 | na | na |
| Moody's Analytics | 1.1 | 2.0 | na | na | 1.1 | 1.4 | -0.9 | 2.5 | 5.1 | 3.2 | 1.3 | 1.0 | na | na | na | na | na | na | na | na |
| S&P Global Market Intel | 1.0 | 1.6 | 1.0 | 1.6 | 0.9 | 1.1 | -1.4 | 3.1 | 2.3 | 1.3 | 1.5 | 1.2 | 260 | 269 | 73.2 | 70.8 | 1.5 | 1.3 | 0.8 | 1.0 |
| Allianz | 1.0 | 1.6 | na | na | na | na | na | na | na | na | 1.6 | 1.2 | na | na | na | na | 1.0 | 0.8 | 0.8 | 1.0 |
| Econ Intelligence Unit | 1.0 | 1.4 | na | na | 2.0 | 1.3 | 1.4 | 1.3 | 2.3 | 2.7 | 1.4 | 1.3 | 280 | 283 | 73.0 | 64.2 | 0.9 | 0.6 | 0.7 | 0.6 |
| S&P Global Ratings | 1.0 | 1.4 | na | na | 1.0 | 1.4 | -1.4 | 1.8 | na | na | 1.5 | 1.4 | na | na | na | na | na | na | na | na |
| Citigroup | 1.0 | 1.4 | na | na | 1.2 | 1.5 | -0.7 | 2.7 | na | na | 1.2 | 1.3 | na | na | 72.6 | 73.7 | 1.3 | 1.0 | 1.0 | 0.9 |
| **Consensus (Mean)** | 1.2 | 1.6 | 1.1 | 1.7 | 1.2 | 1.4 | -0.8 | 2.5 | 2.4 | 2.7 | 1.3 | 1.1 | 272 | 280 | 72.1 | 71.5 | 1.2 | 1.0 | 0.9 | 0.9 |
| Last Month's Mean | 1.1 | 1.6 | 1.1 | 1.7 | 1.2 | 1.4 | -0.3 | 2.4 | 2.0 | 2.8 | 1.4 | 1.1 | 279 | 290 | 70.8 | 71.1 | | | | |
| 3 Months Ago | 1.2 | 1.6 | 1.1 | 1.5 | 1.2 | 1.5 | 0.3 | 2.5 | 1.7 | 2.6 | 1.5 | 1.2 | 274 | 285 | 67.9 | 68.4 | | | | |
| High | 2.0 | 2.0 | 1.5 | 1.8 | 2.0 | 1.8 | 1.4 | 4.1 | 5.1 | 3.5 | 1.6 | 1.5 | 283 | 299 | 81.4 | 79.0 | 1.5 | 1.5 | 1.1 | 1.2 |
| Low | 1.0 | 1.0 | 0.9 | 1.4 | 0.8 | 1.0 | -2.6 | 1.1 | -0.2 | 1.3 | 1.1 | 0.7 | 260 | 269 | 61.8 | 64.2 | 0.9 | 0.6 | 0.7 | 0.6 |
| Standard Deviation | 0.3 | 0.2 | 0.2 | 0.2 | 0.3 | 0.2 | 1.0 | 0.9 | 1.7 | 0.8 | 0.2 | 0.2 | 12 | 14 | 5.1 | 4.4 | 0.2 | 0.2 | 0.1 | 0.2 |
| **Comparison Forecasts** | | | | | | | | | | | | | | | | | | | | |
| IMF (Oct. '23) | 1.8 | 1.2 | | | | | | | | | 2.0 | 1.8 | | | | | | | | |
| SECO (Dec. '23) | 1.5 | 1.3 | 1.1 | 1.7 | | | | | | | 1.9 | 1.1 | | | | | | | | |
| OECD (Nov. '23) | 0.9 | 1.4 | | | 0.8 | 1.0 | -1.6 | 1.0 | | | 2.1 | 1.5 | | | | | | | | |

*Individual forecasts available in Excel

Consensus*

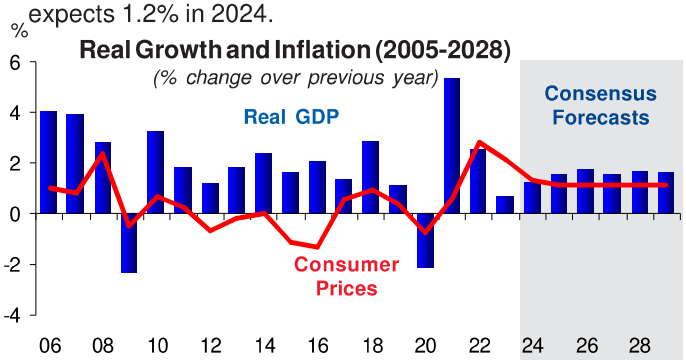
| General Govt Budget Balance (SwFrbn) | |
|---|---|
| 2024 | 2025 |
| *0.4* | *2.4* |

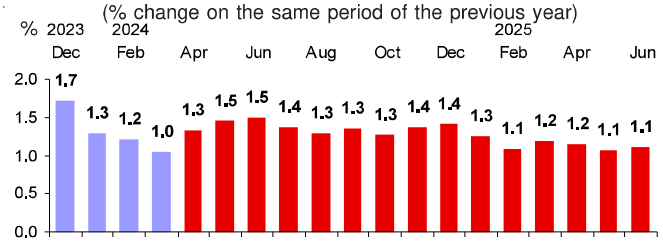
◈ The Swiss National Bank (SNB) unexpectedly cut its policy rate by 25bps to 1.5% on March 21. The move sent the Swiss franc to an eight-month low against the euro and caused government bond yields to tumble. The cut was in response to inflation remaining within the SNB's below-2% target for a ninth consecutive month in February, most recently having eased again to 1.0% (y-o-y) in March. The SNB noted that inflation is expected to remain within target for the next couple years, cutting its CPI forecasts to 1.4% in 2024, 1.2% in 2025 and 1.1% in 2026. The recent cut and more optimistic inflation outlook should provide some relief to growth in the near-term, although GDP expectations are still muted, with the SNB expecting around 1% growth this year, while the consensus expects 1.2% in 2024.

## Historical Data

| * % change on previous year | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|
| Gross Domestic Product* | -2.1 | 5.4 | 2.6 | 0.7 |
| GDP, Sports Events Adjusted | -2.1 | 5.1 | 2.4 | 1.2 |
| Private Consumption* | -3.4 | 1.8 | 4.2 | 2.1 |
| Gross Fixed Investment* | -1.3 | 2.8 | 1.1 | -2.0 |
| Industrial Production* | -3.4 | 9.2 | 5.9 | 0.9 |
| Consumer Prices* | -0.7 | 0.6 | 2.8 | 2.1 |
| Merch Exports, SwFr bn* | 225 | 260 | 278 | 274 |
| Current Account, SwFr bn | 3.4 | 51.2 | 73.7 | 60.8 |
| General Govt Bud Bal, SwFr bn | -19.0 | -6.7 | -1.5 | 1.6 *e* |
| 3mth Swiss Av. Rate, % End yr | -0.7 | -0.7 | 1.0 | 1.7 |
| 10Yr Govt Bond Yield, % End yr | -0.5 | -0.2 | 1.6 | 0.7 |

**Nominal GDP -** SwFr 771bn (2022). **Population -** 8.7mn (IMF, 2022). **SwFr/$ Exchange Rate -** 0.954 (average, 2022).



Forecasts for the countries in Western Europe, the Middle East and Africa shown on the next two pages were provided by the following leading economic forecasters, among others:

*ABSA Capital* *Akava Works* *Allianz*
*Bank Leumi* *Bank of America* *Barclays*
*Capital Economics* *Citigroup* *Danske Bank*
*Deutsche Bank* *Economist Intelligence Unit* *ETLA*
*Euromonitor* *Forecaster ECOSA* *Goldman Sachs*
*Fitch Ratings* *Handelsbanken* *Moody's Analytics*
*NedBank* *Oxford Economics* *Scope Ratings*
*S&P Global Market Intelligence* *S&P Global Ratings* *Universidade Catolica Portuguesa*

## AUSTRIA

Population - 9.0mn (2022, IMF)

Nominal GDP - US$470.6bn (2022)

| | Historical Data | | | | Consensus Forecasts | |
|---|---|---|---|---|---|---|
| | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 |
| Gross Domestic Product *(% change on previous year)* | -6.6 | 4.2 | 4.8 | -0.8 | 0.4 | 1.6 |
| Industrial Production *(% change on previous year)* | -5.5 | 11.2 | 4.6 | -1.0 | 0.5 | 2.9 |
| Consumer Prices *(% change on previous year)* | 1.4 | 2.8 | 8.6 | 7.8 | 3.2 | 2.3 |
| Current Account *(US Dollar bn)* | 15.0 | 7.9 | -1.4 | 13.8 | 15.3 | 13.8 |

## BELGIUM

Population - 11.6mn (2022, IMF)

Nominal GDP - US$578.5bn (2022)

| | Historical Data | | | | Consensus Forecasts | |
|---|---|---|---|---|---|---|
| | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 |
| Gross Domestic Product *(% change on previous year)* | -5.3 | 6.9 | 3.0 | 1.5 | 1.1 | 1.4 |
| Industrial Production *(% change on previous year)* | -4.1 | 25.5 | -0.5 | -7.3 | -0.8 | 1.6 |
| Consumer Prices *(% change on previous year)* | 0.7 | 2.4 | 9.6 | 4.1 | 3.1 | 2.0 |
| Current Account *(US Dollar bn)* | 7.4 | 7.9 | -5.9 | -6.1 | -5.3 | -2.8 |

## DENMARK

Population - 5.9mn (2022, IMF)

Nominal GDP - US$400.8bn (2022)

| | Historical Data | | | | Consensus Forecasts | |
|---|---|---|---|---|---|---|
| | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 |
| Gross Domestic Product *(% change on previous year)* | -2.4 | 6.8 | 2.7 | 1.8 | 1.7 | 1.9 |
| Manufacturing Production *(% change on previous year)* | -4.1 | 10.4 | 13.4 | 10.5 | 4.4 | 3.0 |
| Consumer Prices *(% change on previous year)* | 0.4 | 1.9 | 7.7 | 3.3 | 2.0 | 2.0 |
| Current Account *(US Dollar bn)* | 28.8 | 37.0 | 53.6 | 44.2 | 48.9 | 47.9 |
| | | | | | Jul '24 | Apr '25 |
| 3 month Interbank Rate, *End period %* | -0.2 | -0.3 | 2.5 | 3.9 | 3.7 | 2.5 |

## EGYPT

Population - 104.1mn (2022, IMF)

Nominal GDP - US$387.2bn (2022)[1]

| | Historical Data | | | | Consensus Forecasts | |
|---|---|---|---|---|---|---|
| | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 |
| Gross Domestic Product *(% change on previous year)*[1] | 3.6 | 3.3 | 6.6 | 3.8 *e* | 3.8 | 4.8 |
| Industrial Production *(% change on previous year)* | -10.2 | 9.4 | 6.8 | 0.0 | 2.2 | 4.6 |
| Consumer Prices *(% change on previous year)* | 5.0 | 5.2 | 13.9 | 33.8 | 33.4 | 16.7 |
| Current Account *(US Dollar bn)* | -14.2 | -18.6 | -10.5 | -6.2 *e* | -12.1 | -9.1 |

[1] *year(s) ending June 30*

## FINLAND

Population - 5.5mn (2022, IMF)

Nominal GDP - US$282.9bn (2022)

| | Historical Data | | | | Consensus Forecasts | |
|---|---|---|---|---|---|---|
| | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 |
| Gross Domestic Product *(% change on previous year)* | -2.4 | 2.8 | 1.3 | -1.0 | -0.1 | 1.6 |
| Industrial Production *(% change on previous year)* | -3.0 | 4.1 | 3.6 | -1.5 | 0.0 | 2.0 |
| Consumer Prices *(% change on previous year)* | 0.3 | 2.2 | 7.1 | 6.2 | 1.8 | 1.8 |
| Current Account *(US Dollar bn)* | 1.4 | 1.2 | -6.9 | -4.3 | -1.7 | -1.0 |

## GREECE

Population - 10.6mn (2022, IMF)

Nominal GDP - US$219bn (2022)

| | Historical Data | | | | Consensus Forecasts | |
|---|---|---|---|---|---|---|
| | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 |
| Gross Domestic Product *(% change on previous year)* | -9.0 | 8.1 | 5.7 | 2.0 | 1.8 | 2.2 |
| Industrial Production *(% change on previous year)* | -2.2 | 10.4 | 2.5 | 2.3 | 3.2 | 2.2 |
| Consumer Prices *(% change on previous year)* | -1.2 | 1.2 | 9.6 | 3.5 | 2.6 | 1.9 |
| Current Account *(US Dollar bn)* | -12.3 | -14.0 | -25.1 | -14.7 | -14.6 | -13.6 |

## ADDITIONAL COUNTRIES — APRIL 2024

### IRELAND

Population - 5.1mn (2022, IMF)

Nominal GDP - US$533.1bn (2022)

| | Historical Data | | | | Consensus Forecasts | |
|---|---|---|---|---|---|---|
| | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 |
| Gross Domestic Product *(% change on previous year)* | 6.6 | 15.1 | 9.4 | -3.2 | 1.0 | 3.5 |
| Industrial Production *(% change on previous year)* | 14.6 | 28.4 | 18.9 | -7.7 | 1.9 | 3.7 |
| Consumer Prices *(% change on previous year)* | -0.3 | 2.4 | 7.8 | 6.3 | 2.2 | 2.1 |
| Current Account *(US Dollar bn)* | -27.9 | 70.4 | 57.5 | 53.8 | 50.6 | 55.8 |

### ISRAEL

Population - 9.0mn (2022, IMF)

Nominal GDP - US$522.4bn (2022)

| | Historical Data | | | | Consensus Forecasts | |
|---|---|---|---|---|---|---|
| | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 |
| Gross Domestic Product *(% change on previous year)* | -1.5 | 9.3 | 6.5 | 2.0 | 1.5 | 3.8 |
| Industrial Production *(% change on previous year)* | 5.4 | 7.7 | 14.1 | 0.3 *e* | 1.6 | 3.5 |
| Consumer Prices *(% change on previous year)* | -0.6 | 1.5 | 4.4 | 4.2 | 2.5 | 2.3 |
| Current Account *(US Dollar bn)* | 20.0 | 19.4 | 20.6 | 25.3 | 23.1 | 23.7 |
| | | | | | Jul '24 | Apr '25 |
| 3 Month Interbank Rate, *end period %* | 0.1 | 0.1 | 3.7 | 4.5 | 4.1 | 3.2 |

### NIGERIA

Popn - 216.7mn (2022, IMF)

Nominal GDP - US$475.1bn (2022)

| | Historical Data | | | | Consensus Forecasts | |
|---|---|---|---|---|---|---|
| | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 |
| Gross Domestic Product *(% change on previous year)* | -1.9 | 4.8 | 3.3 | 2.9 | 3.2 | 3.4 |
| Consumer Prices *(% change on previous year)* | 13.2 | 17.0 | 18.8 | 24.5 | 25.4 | 16.8 |
| Current Account *(US Dollar bn)* | -16.0 | -1.8 | -0.1 | 5.7 *e* | 8.7 | 6.2 |

### PORTUGAL

Population - 10.3mn (2022, IMF)

Nominal GDP - US$251.9bn (2022)

| | Historical Data | | | | Consensus Forecasts | |
|---|---|---|---|---|---|---|
| | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 |
| Gross Domestic Product *(% change on previous year)* | -8.3 | 5.7 | 6.8 | 2.3 | 1.2 | 1.8 |
| Industrial Production *(% change on previous year)* | -7.4 | 3.5 | 0.0 | -2.6 | 1.3 | 1.7 |
| Consumer Prices *(% change on previous year)* | 0.0 | 1.3 | 7.8 | 4.3 | 2.5 | 1.8 |
| Current Account *(US Dollar bn)* | -2.4 | -1.9 | -2.9 | 3.9 | 2.0 | 2.7 |

### SAUDI ARABIA

Popn - 34.8mn (2022, IMF)

Nominal GDP - US$1106.8bn (2022)

| | Historical Data | | | | Consensus Forecasts | |
|---|---|---|---|---|---|---|
| | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 |
| Gross Domestic Product *(% change on previous year)* | -3.6 | 5.1 | 7.5 | -0.8 | 1.8 | 4.3 |
| Consumer Prices *(% change on previous year)* | 3.4 | 3.1 | 2.5 | 2.4 | 2.0 | 2.1 |
| Current Account *(US Dollar bn)* | -25.5 | 41.7 | 151.5 | 34.1 | 27.4 | 19.2 |

### SOUTH AFRICA

Popn - 60.6mn (2022, IMF)

Nominal GDP - US$406.1bn (2022)

| | Historical Data | | | | Consensus Forecasts | |
|---|---|---|---|---|---|---|
| | 2020 | 2021 | 2022 | 2023 | 2024 | 202 |
| Gross Domestic Product *(% change on previous year)* | -6.2 | 4.8 | 1.9 | 0.7 | 1.2 | 2.0 |
| Manufacturing Production *(% change on previous year)* | -12.5 | 6.1 | -0.3 | 0.4 *e* | 1.7 | 2.8 |
| Consumer Prices *(% change on previous year)* | 3.3 | 4.6 | 6.9 | 5.9 | 5.0 | 4.6 |
| Current Account *(US Dollar bn)* | 6.6 | 15.3 | -1.8 | -6.7 *e* | -9.2 | -11.0 |
| | | | | | Jul '24 | Apr '25 |
| 3 Month Interbank Rate, *end period %* | 3.6 | 3.9 | 7.3 | 8.5 | 8.3 | 7.6 |

## Foreign Exchange Rates*

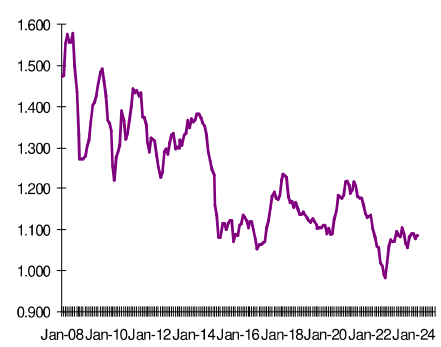
*All US$ rates are amounts of currency per dollar, except the UK pound and the euro which are reciprocals. A positive (+) sign for the % change implies an appreciation of the currency against the US Dollar and vice versa.

| | Historical Data: Rates at end of: 2020 | 2021 | 2022 | 2023 | Latest Spot Rate (Apr. 8) | Consensus Forecasts: Forecast End Jul. 2024 | Percent Change | Forecast End Apr. 2025 | Percent Change | Forecast End Apr. 2026 | Percent Change |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Rates per US Dollar*** | | | | | | | | | | | |
| Canadian Dollar | 1.274 | 1.263 | 1.355 | 1.319 | 1.358 | 1.344 | 1.1 | 1.317 | 3.2 | 1.288 | 5.4 |
| Egyptian Pound | 15.68 | 15.66 | 24.75 | 30.90 | 47.35 | 48.13 | -1.6 | 50.00 | -5.3 | 49.85 | -5.0 |
| European Euro | 1.224 | 1.137 | 1.067 | 1.105 | 1.085 | 1.082 | -0.3 | 1.104 | 1.7 | 1.132 | 4.3 |
| Israeli Shekel | 3.211 | 3.112 | 3.529 | 3.601 | 3.682 | 3.636 | 1.2 | 3.584 | 2.7 | 3.560 | 3.4 |
| Japanese Yen | 103.2 | 115.2 | 131.9 | 141.0 | 151.8 | 145.0 | 4.7 | 138.0 | 10.0 | 128.9 | 17.8 |
| Nigerian Naira | 383.0 | 410.2 | 460.8 | 905.5 | 1263 | 1435 | -12.0 | 1458 | -13.4 | 1688 | -25.2 |
| Saudi Arabian Riyal | 3.750 | 3.750 | 3.758 | 3.750 | 3.751 | 3.750 | 0.0 | 3.750 | 0.0 | 3.750 | 0.0 |
| South African Rand | 14.69 | 15.96 | 17.02 | 18.29 | 18.64 | 19.19 | -2.9 | 18.68 | -0.2 | 18.40 | 1.3 |
| United Kingdom Pound | 1.367 | 1.354 | 1.203 | 1.275 | 1.265 | 1.260 | -0.4 | 1.277 | 1.0 | 1.311 | 3.6 |
| **Rates per Euro** | | | | | | | | | | | |
| Danish Krone | 7.444 | 7.438 | 7.436 | 7.455 | 7.459 | 7.457 | 0.0 | 7.457 | 0.0 | 7.457 | 0.0 |
| Norwegian Krone | 10.48 | 10.03 | 10.51 | 11.22 | 11.60 | 11.33 | 2.4 | 11.02 | 5.3 | 10.41 | 11.4 |
| Swedish Krona | 10.05 | 10.30 | 11.12 | 11.13 | 11.46 | 11.33 | 1.2 | 11.08 | 3.4 | 10.57 | 8.4 |
| Swiss Franc | 1.082 | 1.036 | 0.987 | 0.930 | 0.982 | 0.967 | 1.6 | 0.981 | 0.2 | 0.997 | -1.5 |

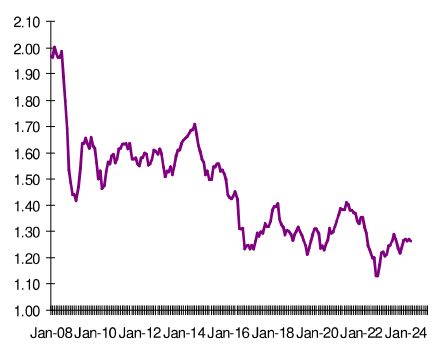
*For more forecasts covering a majority of world currencies, please email us about Foreign Exchange Consensus Forecasts.*

Yen per US$


US$ per Euro[1]




US$ per UK Pound






## Brent, US$ per barrel

| | |
|---|---|
| Range 1990-2024 | US$9.10 - US$143.95 |
| Spot Rate (April 8) | US$ 91.73 |

| Brent April Survey | Forecast for End Jul 2024 | End Apr 2025 |
|---|---|---|
| Mean Forecast | 85.1 | 83.2 |
| High | 95.0 | 95.0 |
| Low | 77.0 | 70.0 |
| Standard Deviation | 4.3 | 5.7 |
| No. of Forecasts | 45 | 44 |

### Brent Oil Prices Jump Above US$90 Mark

The European spot price for Brent jumped above the US$90-per-barrel level on April 3 as a result of concerns over the Israel-Gaza conflict, not to mention tighter oil supplies. The war has significantly increased geopolitical and oil-price volatility in that it also risks involving major oil producers. Negotiations aimed at brokering a ceasefire did moderate prices somewhat on April 8 and 9, but the risk of further geopolitical confrontation is very elevated. Meanwhile, oil supply dynamics remain squeezed. OPEC+ agreed to maintain supply cuts through to June and urged greater compliance among members. Meanwhile, Mexico is limiting its crude exports in May in order to prioritise supplies to domestic refineries, and the long-time reduction in Russian oil flows to the West remains a factor also. Oil inventories will likely see further draw-downs going into the summer driving period.

*continued from page 3*

## Germany

| * % change over previous year | Historical | | | | Consensus Forecasts | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030-34[1] |
| Gross Domestic Product* | -3.8 | 3.2 | 1.8 | -0.3 | 0.1 | 1.1 | 1.3 | 1.2 | 1.0 | 0.9 | 0.8 |
| Private Consumption* | -5.9 | 1.5 | 3.9 | -0.7 | 0.9 | 1.4 | 1.4 | 1.1 | 0.9 | 0.9 | 0.8 |
| Machinery & Eqpt Investment* | -11.1 | 2.8 | 4.0 | 3.0 | -0.6 | 2.4 | 2.7 | 2.2 | 2.0 | 1.9 | 1.7 |
| Industrial Production* | -7.7 | 3.6 | -1.0 | -1.6 | -1.8 | 1.9 | 2.3 | 1.7 | 1.2 | 0.9 | 0.5 |
| Consumer Prices* | 0.5 | 3.1 | 6.9 | 5.9 | 2.4 | 2.0 | 2.1 | 2.2 | 2.2 | 2.2 | 2.2 |
| Current Account Balance (Euro bn) | 222.5 | 263.5 | 164.6 | 243.1 | 269.8 | 272.9 | 273.7 | 266.8 | 265.3 | 235.2 | 233.3 |
| 10 Year Govt Bond Yield, % [1] | -0.6 | -0.2 | 2.6 | 2.0 | 2.3 [3] | 2.2 [4] | 2.4 | 2.4 | 2.5 | 2.5 | 2.5 |

## France

| * % change over previous year | Historical | | | | Consensus Forecasts | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030-34[1] |
| Gross Domestic Product* | -7.7 | 6.4 | 2.5 | 0.9 | 0.7 | 1.3 | 1.5 | 1.4 | 1.3 | 1.3 | 1.2 |
| Household Consumption* | -6.7 | 5.1 | 2.1 | 0.6 | 1.0 | 1.4 | 1.6 | 1.5 | 1.4 | 1.3 | 1.3 |
| Business Investment* | -5.7 | 9.8 | 3.8 | 2.7 | -0.4 | 1.5 | 2.2 | 2.2 | 2.0 | 1.7 | 1.6 |
| Manufacturing Production* | -11.7 | 5.4 | 1.7 | 0.7 | 0.5 | 1.7 | 1.9 | 1.8 | 1.6 | 1.4 | 1.3 |
| Consumer Prices* | 0.5 | 1.6 | 5.2 | 4.9 | 2.5 | 1.9 | 1.8 | 1.9 | 1.9 | 1.9 | 1.8 |
| Current Account Balance (Euro bn) | -37.5 | 9.8 | -52.7 | -33.8 | -26.5 | -25.8 | -28.9 | -29.4 | -29.4 | -26.8 | -28.4 |
| 10 Year Govt Bond Yield, % [1] | -0.3 | 0.2 | 3.1 | 2.6 | 2.8 [3] | 2.6 [4] | 2.7 | 2.7 | 2.8 | 2.8 | 2.8 |

## United Kingdom

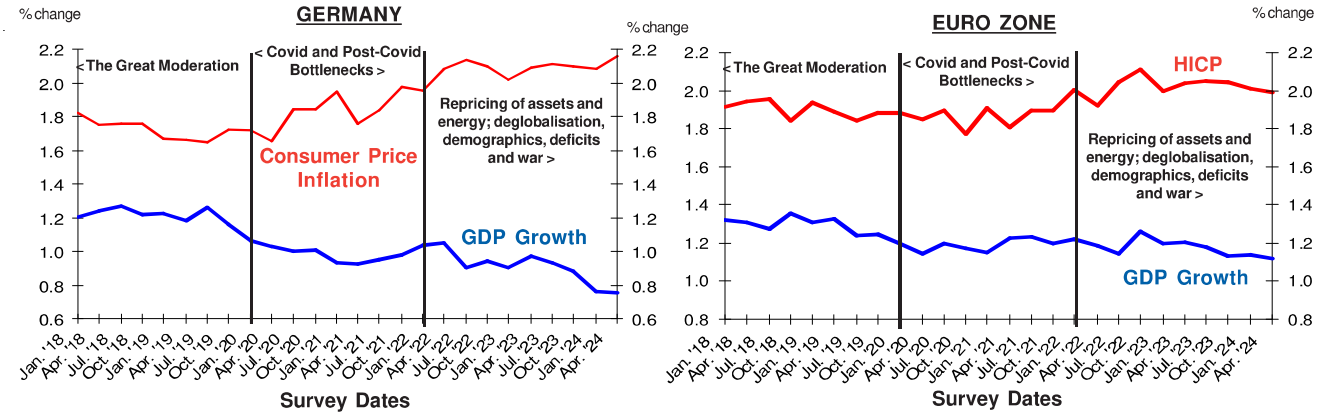
| * % change over previous year | Historical | | | | Consensus Forecasts | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030-34[1] |
| Gross Domestic Product* | -10.4 | 8.7 | 4.3 | 0.1 | 0.3 | 1.2 | 1.6 | 1.6 | 1.5 | 1.5 | 1.6 |
| Household Consumption* | -13.0 | 7.5 | 4.8 | 0.2 | 0.4 | 1.3 | 1.6 | 1.7 | 1.6 | 1.6 | 1.7 |
| Gross Fixed Investment* | -10.8 | 7.4 | 8.0 | 2.2 | -1.0 | 0.9 | 2.1 | 2.2 | 2.2 | 1.9 | 1.8 |
| Manufacturing Production* | 2.3 | 1.5 | -3.3 | 1.2 | 0.0 | -0.4 | 0.7 | 0.9 | 0.7 | 0.4 | 0.5 |
| Retail Prices (underlying rate)* | 1.7 | 4.2 | 11.5 | 8.6 | 3.4 | 3.1 | 3.2 | 3.7 | 3.6 | 3.5 | 3.4 |
| Consumer Prices* | 0.9 | 2.6 | 9.1 | 7.3 | 2.5 | 2.2 | 2.2 | 2.3 | 2.3 | 2.3 | 2.2 |
| Current Account Balance (£ bn) | -60.4 | -10.8 | -77.2 | -88.5 | -65.7 | -61.7 | -67.6 | -67.1 | -66.3 | -53.2 | -60.0 |
| 10 Year Govt Bond Yield, % [2] | 0.2 | 1.0 | 3.7 | 3.5 | 4.0 [3] | 3.8 [4] | 3.7 | 3.8 | 3.8 | 3.8 | 3.7 |

[1] *Signifies average for period* [2] *End period* [3] *End July 2024* [4] *End April 2025*

We have 'telescoped' the **6-10 year rolling-period average of GDP and CPI forecasts (collected four times a year)** from **January 2018 to April 2024**. This encapsulates the Great Moderation era of globalisation and 0% interest rates, followed by the Covid and Post-Covid era, and finally the current period. Inflection points like war in Ukraine, inflation, rapidly tightening monetary policies have triggered a reset in geopolitics and globalisation, not to mention repriced assets, labour and debt.

### Germany and Euro zone – Long-Term 6-10 Year Forecasts between January 2018 - April 2024

(% change over previous year)



## Italy

| * % change over previous year | Historical 2020 | 2021 | 2022 | 2023 | Consensus Forecasts 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030-34[1] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gross Domestic Product* | -9.0 | 8.3 | 4.0 | 0.9 | 0.7 | 1.0 | 1.0 | 0.9 | 0.8 | 0.7 | 0.7 |
| Household Consumption* | -10.3 | 5.4 | 4.9 | 1.2 | 0.3 | 0.9 | 0.8 | 0.7 | 0.6 | 0.7 | 0.6 |
| Gross Fixed Investment* | -7.9 | 20.3 | 8.6 | 4.7 | 1.4 | 1.3 | 1.8 | 1.2 | 1.1 | 0.8 | 0.9 |
| Industrial Production* | -11.5 | 12.3 | 0.3 | -0.2 | 0.2 | 1.9 | 1.7 | 1.7 | 1.3 | 1.0 | 0.4 |
| Consumer Prices* | -0.2 | 1.9 | 8.1 | 5.7 | 1.6 | 1.8 | 1.7 | 1.7 | 1.8 | 1.8 | 1.9 |
| Current Account Balance (Euro bn) | 64.5 | 43.3 | -30.9 | 10.6 | 25.3 | 32.1 | 38.4 | 43.6 | 47.9 | 52.9 | 48.4 |
| 10 Year Treasury Bond Yield, %[2] | 0.5 | 1.2 | 4.7 | 3.7 | 3.9 [3] | 3.8 [4] | 3.9 | 4.0 | 4.0 | 4.0 | 4.0 |

## Canada

| * % change over previous year | Historical 2020 | 2021 | 2022 | 2023 | Consensus Forecasts 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030-34[1] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gross Domestic Product* | -5.0 | 5.3 | 3.8 | 1.1 | 0.9 | 1.9 | 2.2 | 2.1 | 2.0 | 1.9 | 1.8 |
| Personal Expenditure* | -6.4 | 5.2 | 5.1 | 1.7 | 1.0 | 1.8 | 2.1 | 2.2 | 2.1 | 2.0 | 1.9 |
| Machinery & Eqpt Investment* | -15.0 | 14.0 | -0.3 | -6.2 | -1.1 | 2.6 | 3.7 | 3.2 | 2.7 | 2.2 | 1.9 |
| Industrial Production* | -7.5 | 5.0 | 3.9 | -0.6 | 0.9 | 1.6 | 1.9 | 1.5 | 1.8 | 1.5 | 1.4 |
| Consumer Prices* | 0.7 | 3.4 | 6.8 | 3.9 | 2.5 | 2.1 | 2.0 | 2.0 | 2.1 | 2.0 | 2.0 |
| Current Account Balance (C$ bn) | -44.8 | 0.4 | -10.3 | -17.8 | -12.6 | -18.8 | -22.5 | -24.7 | -28.3 | -26.9 | -38.2 |
| 10 Year Treasury Bond Yield, %[2] | 0.7 | 1.4 | 3.3 | 3.1 | 3.4 [3] | 3.1 [4] | 3.1 | 3.2 | 3.2 | 3.5 | 3.4 |

## Euro zone

| * % change over previous year | Historical 2020 | 2021 | 2022 | 2023 | Consensus Forecasts 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030-34[1] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gross Domestic Product* | -6.1 | 5.9 | 3.4 | 0.4 | 0.5 | 1.4 | 1.5 | 1.4 | 1.3 | 1.2 | 1.1 |
| Private Consumption* | -7.7 | 4.4 | 4.2 | 0.5 | 0.9 | 1.4 | 1.4 | 1.3 | 1.2 | 1.0 | 0.9 |
| Gross Fixed Investment* | -5.9 | 3.5 | 2.5 | 1.1 | 0.6 | 2.0 | 2.1 | 2.0 | 1.7 | 1.3 | 1.2 |
| Industrial Production* | -7.6 | 8.7 | 2.0 | -2.2 | -0.7 | 2.0 | 2.0 | 2.0 | 1.6 | 1.3 | 1.1 |
| Consumer Prices* | 0.3 | 2.6 | 8.4 | 5.4 | 2.3 | 1.9 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Current Account Balance (Euro bn) | 205.7 | 352.1 | -73.6 | 267.4 | 293.0 | 308.8 | 406.3 | 426.2 | 438.8 | 435.6 | 461.1 |
| 3 month Euribor Rate, % ** | -0.5 | -0.6 | 2.1 | 3.9 | 3.6 [3] | 2.7 [4] | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 |

## Netherlands

| * % change over previous year | Historical 2020 | 2021 | 2022 | 2023 | Consensus Forecasts 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030-34[1] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gross Domestic Product* | -3.9 | 6.2 | 4.3 | 0.1 | 0.7 | 1.4 | 1.5 | 1.5 | 1.4 | 1.4 | 1.3 |
| Private Consumption* | -6.4 | 4.3 | 6.6 | 0.4 | 1.7 | 1.7 | 1.6 | 1.5 | 1.3 | 1.3 | 1.2 |
| Gross Fixed Investment* | -2.6 | 2.9 | 1.8 | 2.0 | -2.3 | 1.8 | 2.3 | 2.7 | 2.1 | 1.9 | 1.6 |
| Manufacturing Production* | -3.0 | 7.2 | 7.8 | -2.5 | -0.8 | 1.9 | 2.2 | 1.8 | 1.6 | 1.5 | 1.3 |
| Consumer Prices* | 1.3 | 2.7 | 10.0 | 3.8 | 2.6 | 2.2 | 2.1 | 2.4 | 2.4 | 2.3 | 2.2 |
| Current Account Balance (Euro bn) | 41.0 | 105.5 | 88.9 | 104.4 | 96.0 | 92.1 | 93.8 | 96.7 | 102.4 | 109.5 | 122.8 |
| 10 Year Treasury Bond Yield, %[2] | -0.5 | 0.0 | 2.9 | 2.3 | 2.4 [3] | 2.4 [4] | 2.5 | 2.6 | 2.6 | 2.7 | 2.6 |

[1] *Signifies average for period* [2] *End period* [3] *End July 2024* [4] *End April 2025*

## Norway

| * % change over previous year | Historical 2020 | 2021 | 2022 | 2023 | 2024 | Consensus Forecasts 2025 | 2026 | 2027 | 2028 | 2029 | 2030-34[1] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gross Dom Prod (Mainland)* | -2.8 | 4.5 | 3.7 | 0.7 | 0.5 | 1.4 | 1.8 | 1.7 | 1.7 | 1.4 | 1.2 |
| GDP (Total)* | -1.3 | 3.9 | 3.0 | 0.5 | 1.3 | 1.6 | 1.5 | 1.4 | 1.7 | 1.5 | 1.5 |
| Private Consumption* | -6.4 | 5.1 | 5.9 | -0.9 | 1.0 | 1.7 | 2.1 | 1.9 | 1.6 | 1.3 | 1.2 |
| Gross Fixed Investment* | -4.1 | 0.7 | 5.2 | 0.3 | -1.0 | 0.8 | 2.0 | 2.8 | 2.7 | 2.5 | 2.4 |
| Manufacturing Production* | -3.1 | 3.2 | -0.3 | -0.3 | 1.1 | 3.0 | 1.0 | 0.4 | 0.0 | -0.2 | -0.3 |
| Consumer Prices* | 1.3 | 3.5 | 5.8 | 5.5 | 3.4 | 2.3 | 2.1 | 2.1 | 2.0 | 1.9 | 1.8 |
| Current Account Balance (Nkr bn) | 38.2 | 643.6 | 1722 | 909.1 | 832.7 | 775.8 | 724.0 | 710.4 | 697.2 | 718.6 | 699.5 |
| 10 Year Treasury Bond Yield, %[2] | 0.9 | 1.7 | 3.2 | 3.3 | 3.5 [3] | 3.1 [4] | 3.0 | 3.2 | 3.2 | 3.5 | 3.4 |

## Spain

| * % change over previous year | Historical 2020 | 2021 | 2022 | 2023 | 2024 | Consensus Forecasts 2025 | 2026 | 2027 | 2028 | 2029 | 2030-34[1] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gross Domestic Product* | -11.2 | 6.4 | 5.8 | 2.5 | 1.7 | 1.8 | 1.8 | 1.7 | 1.6 | 1.5 | 1.3 |
| Household Consumption* | -12.4 | 7.2 | 4.8 | 1.8 | 1.9 | 1.7 | 1.7 | 1.6 | 1.6 | 1.5 | 1.2 |
| Gross Fixed Investment* | -9.0 | 2.8 | 2.4 | 0.8 | 1.2 | 3.3 | 2.6 | 2.3 | 2.2 | 2.0 | 1.7 |
| Industrial Production* | -10.1 | 8.1 | 1.9 | -0.7 | 1.1 | 1.6 | 1.4 | 1.3 | 1.3 | 1.3 | 1.3 |
| Consumer Prices* | -0.3 | 3.1 | 8.4 | 3.5 | 3.0 | 2.1 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Current Account Balance (Euro bn) | 6.9 | 9.3 | 8.2 | 38.0 | 32.0 | 33.8 | 37.5 | 36.8 | 35.4 | 37.8 | 31.6 |
| 10 Year Treasury Bond Yield, %[2] | 0.0 | 0.6 | 3.7 | 3.0 | 3.2 [#] | 3.1 [4] | 3.0 | 3.1 | 3.1 | 3.1 | 3.2 |

## Sweden

| * % change over previous year | Historical 2020 | 2021 | 2022 | 2023 | 2024 | Consensus Forecasts 2025 | 2026 | 2027 | 2028 | 2029 | 2030-34[1] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gross Domestic Product* | -2.2 | 6.1 | 2.7 | -0.2 | 0.2 | 2.1 | 2.1 | 2.0 | 1.8 | 1.8 | 1.7 |
| Household Consumption* | -3.2 | 6.3 | 2.3 | -2.5 | 0.6 | 2.0 | 2.1 | 2.1 | 1.9 | 2.0 | 1.8 |
| Gross Fixed Investment* | 1.7 | 7.1 | 6.2 | -1.5 | -1.4 | 2.5 | 2.8 | 2.5 | 2.2 | 1.8 | 1.6 |
| Mining & Manufacturing Productior | -5.2 | 7.4 | 2.3 | 1.3 | 0.8 | 2.6 | 2.3 | 2.0 | 2.5 | 1.6 | 1.6 |
| Consumer Prices* | 0.5 | 2.2 | 8.4 | 8.5 | 3.2 | 1.7 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Current Account (Skr bn) | 295.4 | 387.5 | 322.6 | 425.5 | 366.2 | 366.3 | 334.2 | 344.6 | 337.0 | 288.9 | 295.6 |
| 10 Year Treasury Bond Yield, %[2] | 0.0 | 0.2 | 2.4 | 2.1 | 2.3 [#] | 2.4 [4] | 2.5 | 2.5 | 2.5 | 2.6 | 2.7 |

## Switzerland

| * % change over previous year | Historical 2020 | 2021 | 2022 | 2023 | 2024 | Consensus Forecasts 2025 | 2026 | 2027 | 2028 | 2029 | 2030-34[1] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gross Domestic Product* | -2.1 | 5.4 | 2.6 | 0.7 | 1.2 | 1.6 | 1.7 | 1.6 | 1.7 | 1.6 | 1.6 |
| GDP, Sports Events Adjusted* | -2.1 | 5.1 | 2.4 | 1.2 | 1.1 | 1.7 | 1.4 | 1.6 | 1.5 | 1.5 | 1.4 |
| Private Consumption* | -3.4 | 1.8 | 4.2 | 2.1 | 1.2 | 1.4 | 1.5 | 1.4 | 1.4 | 1.4 | 1.3 |
| Gross Fixed Investment* | -1.3 | 2.8 | 1.1 | -2.0 | -0.8 | 2.5 | 2.6 | 2.5 | 2.3 | 2.1 | 2.1 |
| Industrial Production* | -3.4 | 9.2 | 5.9 | 0.9 | 2.4 | 2.7 | 3.5 | 3.1 | 2.5 | 2.8 | 2.4 |
| Consumer Prices* | -0.7 | 0.6 | 2.8 | 2.1 | 1.3 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 |
| Current Account Balance (SwFr bn) | 3.4 | 51.2 | 73.7 | 60.8 | 72.1 | 71.5 | 73.6 | 73.4 | 77.2 | 80.2 | 94.4 |
| 10 Year Treasury Bond Yield, %[2] | -0.5 | -0.2 | 1.6 | 0.7 | 0.9 [#] | 0.9 [4] | 1.1 | 1.1 | 1.1 | 1.3 | 1.4 |

*[1]Signifies average for period [2]End period [3]End July 2024 [4]End April 2025*

- **GDP** - Gross Domestic Product **IMF** - International Monetary Fund
  **na** - not available **Emu** - European economic and monetary union
  **OECD** - Organisation for Economic Co-operation and Development **ECB** - European Central Bank
  **BoE** - Bank of England **PMI** - Purchasing Managers Index
  **y-o-y** - year-on-year **q-o-q** - quarter-on-quarter **m-o-m** - month-on-month

- Measures of GDP, Consumption, Business Investment and Industrial Production are expressed in real (i.e. inflation-adjusted) terms. These variables, and certain others as indicated, are expressed as percentage changes over the previous year.

- All individual country forecasters on pages 4-24 are listed in descending order of their 2024 real GDP estimates. Consensus forecasts are mean arithmetic averages of the listed individual estimates.

# CONSENSUS FORECASTS: WORLD ECONOMIC ACTIVITY

↑ Consensus Forecast **Increase** From Prior Month ↓ Consensus Forecast **Decrease** From Prior Month

| April Survey | Real GDP % increase | | | Consumer Prices % increase | | | Current Account Balance, US$bn | | |
|---|---|---|---|---|---|---|---|---|---|
| | 2023 | 2024 | 2025 | 2023 | 2024 | 2025 | 2023 | 2024 | 2025 |
| Belgium | 1.5 | 1.1 ↑ | 1.4 ↓ | 4.1 | 3.1 ↑ | 2.0 ↓ | -6.1 | -5.3 | -2.8 |
| Canada | 1.1 | 0.9 ↑ | 1.9 ↑ | 3.9 | 2.5 | 2.1 | -13.2 | -9.3 | -14.3 |
| France | 0.9 | 0.7 | 1.3 | 4.9 | 2.5 | 1.9 | -36.6 | -28.8 | -28.6 |
| Germany | -0.3 | 0.1 | 1.1 | 5.9 | 2.4 ↓ | 2.0 ↓ | 262.9 | 292.9 | 302.6 |
| Italy | 0.9 | 0.7 ↑ | 1.0 | 5.7 | 1.6 ↓ | 1.8 ↓ | 11.5 | 27.5 | 35.6 |
| Japan | 1.9 | 0.6 | 1.2 ↑ | 3.3 | 2.4 ↑ | 1.8 ↑ | 149.8 | 159.5 | 167.5 |
| Netherlands | 0.1 | 0.7 | 1.4 | 3.8 | 2.6 ↑ | 2.2 | 112.9 | 104.2 | 102.1 |
| Norway | 0.7 | 0.5 ↓ | 1.4 | 5.5 | 3.4 ↓ | 2.3 | 86.1 | 79.5 | 78.9 |
| Spain | 2.5 | 1.7 ↑ | 1.8 | 3.5 | 3.0 | 2.1 ↓ | 41.1 | 34.7 | 37.4 |
| Sweden | -0.2 | 0.2 | 2.1 ↑ | 8.5 | 3.2 | 1.7 ↓ | 40.1 | 35.1 | 37.0 |
| Switzerland | 0.7 | 1.2 ↑ | 1.6 | 2.1 | 1.3 ↓ | 1.1 | 67.6 | 81.0 | 80.6 |
| United Kingdom | 0.1 | 0.3 ↑ | 1.2 ↑ | 7.3 | 2.5 | 2.2 | -110.1 | -83.1 | -79.1 |
| United States | 2.5 | 2.3 ↑ | 1.7 ↑ | 4.1 | 2.9 ↑ | 2.2 | -819 | -862.9 | -900.4 |
| North America[1] | 2.4 | 2.2 | 1.7 | 4.1 | 2.9 | 2.2 | -832.0 | -872.3 | -914.7 |
| Western Europe[2] | 0.4 | 0.6 | 1.4 | 5.5 | 2.4 | 2.0 | 566.2 | 638.4 | 669.2 |
| European Union[2] | 0.5 | 0.8 | 1.6 | 7.2 | 2.6 | 2.1 | 403.2 | 542.2 | 568.1 |
| Euro zone[2] | 0.4 | 0.5 | 1.4 ↑ | 5.4 | 2.3 | 1.9 ↓ | 289.1 | 318.1 | 342.4 |
| Asia Pacific[3] | 4.2 | 3.8 | 3.8 | 2.1 | 1.9 | 2.1 | 638.8 | 645.2 | 657.7 |
| Eastern Europe[4,7] | 2.7 | 2.5 | 2.8 | 16.7 | 13.0 | 8.2 | -23.8 | -5.7 | -17.8 |
| LatAm ex Venezuela[5,7] | 2.2 | 1.5 | 2.4 | 23.8 | 22.2 | 8.7 | -83.0 | -83.1 | -98.9 |
| Other Countries[6] | 1.4 | 2.3 | 3.8 | 12.6 | 12.2 | 7.7 | 52.3 | 37.9 | 29.0 |
| Total[7] | 2.6 | 2.4 | 2.5 | 5.6 | 4.3 | 3.0 | | | |



*Regional totals and the grand totals for GDP growth and inflation, are weighted averages calculated using **2020 GDP weights, converted at average 2020 US$ exchange rates.** These weights and rates were last updated in July 2021. Due to annual updates in exchange rates and GDP weights in July-September of each year, there will be differences in the Regional and World Aggregates in those months. Therefore, some aggregates may not be comparable to the aggregates from previous months. Current account forecasts given in national currencies on pages 7-24 have been converted using consensus exchange rate forecasts for the purposes of comparison. [1] USA and Canada. [2] The Euro zone aggregate is taken from our panel's latest forecasts (pages 18-19). The Euro zone current account data and forecasts are based on extra-euro zone data, i.e., an aggregate of the Euro zone member states' transactions with nonresidents of theat economic area. The European Union data includes the Euro zone countries listed on page 18 plus Denmark and Sweden, as well as the Czech Republic, Hungary, Poland, Romania, Bulgaria (data taken from Eastern Europe Consensus Forecasts). Western Europe comprises the six Euro zone countries listed in the table above, plus Austria, Denmark, Finland, Greece, Ireland, Norway, Portugal, Sweden, Switzerland and the United Kingdom. [3] Survey results for Japan plus sixteen other countries taken from **Asia Pacific Consensus Forecasts**. [4] Twenty-seven countries, including twelve European Union countries taken from the latest issue of **Eastern Europe Consensus Forecasts.** [5] Seventeen countries taken from the latest issue of **Latin American Consensus Forecasts** (inflation figures are on a December/December basis). Venezuela is excluded beginning in April 2018. [6] Egypt, Israel, Nigeria, Saudi Arabia and South Africa. [7] The **Eastern Europe** and **Latin American** components of the **World Total** are taken from the prior month's survey.*

Ontario Energy Association (OEA)

Answer to Interrogatory from
Association of Major Power Consumers in Ontario (AMPCO) / Industrial Gas Users Association (IGUA)

INTERROGATORY

Reference:

On pages 66-68, Concentric discusses its beta estimates it uses in its CAPM Ke calculations.

On page 66, Concentric states that:

> "… empirical studies have provided evidence that an individual company beta is more likely than not to move toward the market mean of 1.0 over time." The study by Blume that Concentric references to support this assertion in footnote 77 is a 1970 article – 54 years old.

Evidence supporting the fact that utility betas do not gravitate towards one:

Michelfelder and Theodossiou (2013) show empirically that utility betas do not have a tendency to converge to 1.0 and concluded that the adjusted betas as reported by Value Line are not applicable for public utilities.

- As shown in Appendix B of Exhibit M4 herein (Dr. Cleary's evidence), Sikes (2022) provides a chart in Figure IV of his report that estimates betas for utilities over the 1970-2020 period (i.e., using over 50 years of observations) that leads Sikes to note (on page 48 of his report) that: "It is undeniable based on Figure IV that the Value Line Adjustment is inappropriate. Clearly, utility betas have been consistently below 1.0 and as shown in Exhibit H of the Appendix, the historical sample suggests an average of 0.55." In fact, the line depicting adjusted betas in Sikes' Figure IV is ALWAYS above the line depicting actual betas – which clearly shows that adjusted beta estimates are upwardly biased.

- Exhibit M4, Appendix B shows that over the historical raw Beta estimates for Canadian Utilities over the 1995-2019 period averaged 0.40 (weekly data) and 0.34 (monthly data), with maximums of 0.71 and 0.62 respectively and nowhere during this 25-year period did the Canadian Utility beta estimates even come close to 1.0.

- Exhibit M4, Appendix B shows that over the historical raw Beta estimates for U.S. Utilities over the 1995-2019 period averaged 0.49 (weekly data) and 0.42

(monthly data), with maximums of 0.84 and 0.85 respectively and nowhere during this 25-year period did the U.S. Utility beta estimates even come close to 1.0.

Question(s):

a) Please provide the Blume (1970) study referenced in footnote 77.

b) Please confirm that the Blume (1970) study referenced by Concentric examines beta estimates for a broad variety of industries and does not focus on one particular industry (including utility stocks). If not confirmed, please explain.

c) Given the evidence cited above that utility betas do not gravitate to one (or that utility sample averages never get close to one) please explain the rationale for Concentric's reliance on upwardly biased adjusted beta estimates.

d) Please provide all the associated raw "unadjusted" beta estimates for the beta estimates provided in Concentric's Exhibit CEA-7.3 for the Canadian and North American proxy groups, and recalculate Concentric's CAPM Ke estimates for all of the proxy groups as reported in Figure 18 (page 70) of Concentric's evidence using raw beta estimates. If Concentric is unable to locate the raw or unadjusted beta estimates from the initial data sources, please adjust the beta estimates using the formula:

$$\text{Raw Beta} = (\text{Adj. Beta} - 1/3) \times (3/2)$$

For example, the average adjusted beta of 0.84 for the Canadian proxy group would equate to a raw beta of 0.765 as calculated below:

$$\text{Raw Beta} = (0.84 - 0.33)(3/2) = 0.765$$

Please provide all supporting data and worksheets (in excel format), with all accompanying formulae.

Response:

a) Please see AMPCO/IGUA-9(a), Attachment 1 for the requested Blume study which is dated March 1971.

b) Confirmed.

c) Concentric does not agree with the characterization of the betas used in its analysis as "upwardly biased". See the response to N-M2-10-OEB Staff-13 (a) for further

explanation and support for the use of adjusted betas, and note in response to (d) below, that the CAPM results using "raw" and "adjusted" betas are similar, as utility betas have increased toward 1.0, lessening the impact of the adjustment toward the market mean.

d) Please see the below, as well as AMPCO/IGUA-9(d), Attachment 1.

| Proxy Group | Average MRP | Forward-looking MRP | Historical MRP |
|---|---|---|---|
| Canadian | 10.86% | 12.87% | 8.85% |
| U.S. Electric | 12.75% | 15.11% | 10.39% |
| U.S. Gas | 11.44% | 13.42% | 9.46% |
| North American Electric | 12.09% | 14.30% | 9.88% |
| North American Gas | 11.58% | 13.70% | 9.47% |
| North American Combined | 12.09% | 14.30% | 9.87% |

On the Assessment of Risk
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# ON THE ASSESSMENT OF RISK

MARSHALL E. BLUME*

## I. INTRODUCTION

THE CONCEPT OF RISK has so permeated the financial community that no one needs to be convinced of the necessity of including risk in investment analysis. Still of controversy is what constitutes risk and how it should be measured. This paper examines the statistical properties of one measure of risk which has had wide acceptance in the academic community: namely the coefficient of non-diversifiable risk or more simply the beta coefficient in the market model.

The next section defines this beta coefficient and presents a brief non-rigorous justification of its use as a measure of risk. After discussing the sample and its basic properties in Section III, Section IV examines the stationarity of this beta coefficient over time and proposes a method of obtaining improved assessments of this measure of risk.

## II. THE RATIONALE OF BETA AS A MEASURE OF RISK

The interpretation of the beta coefficient as a measure of risk rests upon the empirical validity of the market model. This model asserts that the return from time (t-1) to t on asset i, $\tilde{R}_{it}$,[1] is a linear function of a market factor common to all assets $\tilde{M}_t$, and independent factors unique to asset i, $\tilde{\varepsilon}_{it}$.

Symbolically, this relationship takes the form

$$\tilde{R}_{it} = \alpha_i + \beta_i \tilde{M}_t + \tilde{\varepsilon}_{it}, \tag{1}$$

where the tilde indicates a random variable, $\alpha_i$ is a parameter whose value is such that the expected value of $\tilde{\varepsilon}_{it}$ is zero, and $\beta_i$ is a parameter appropriate to asset i.[2] That the random variables $\tilde{\varepsilon}_{it}$ are assumed to be independent and

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1. In this paper, return will be measured as the ratio of the value of the investment at time t with dividends reinvested to the value of the investment at time (t-1). Dividends are assumed reinvested at time t.

2. The parameter $\beta_i$ is defined as Cov $(\tilde{R}_i, \tilde{M})$/Var $(\tilde{M})$.

unique to asset i implies that Cov ($\tilde{\varepsilon}_{it}$, $\tilde{M}_t$) is zero and that Cov ($\tilde{\varepsilon}_{it}$, $\tilde{\varepsilon}_{jt}$), $i \neq j$, are zero. This last conclusion is tantamount to assuming the absence of industry effects.

The empirical validity of the market model as it applies to common stocks listed on the NYSE has been examined extensively in the literature.[3] The principal conclusions are: (1) The linearity assumption of the model is adequate.[4] (2) The variables $\tilde{\varepsilon}_{it}$ cannot be assumed independent between securities because of the existence of industry effects. However, these industry effects, as documented by King,[5] probably account for only about ten percent of the variation in returns, so that as a first approximation they can be ignored. (3) The unique factors $\tilde{\varepsilon}_{it}$ correspond more closely to non-normal stable variates than to normal ones. This conclusion means that variances and covariances of the unique factors do not exist. Nonetheless, this paper will make the more common assumption of the existence of these statistics in justifying the beta coefficient as a measure of risk since Fama[6] and Jensen[7] have shown that this coefficient can still be interpreted as a measure of risk under the assumption that the $\tilde{\varepsilon}_{it}$'s are non-normal stable variates.

That the beta coefficient, $\beta_i$, in the market model can be interpreted as a measure of risk will be justified in two different ways: the portfolio approach and the equilibrium approach.

## A. *The Portfolio Approach*

The important assumption underlying the portfolio approach is that individuals evaluate the risk of a portfolio as a whole rather than the risk of each asset individually. An example will illustrate the meaning of this statement. Consider two assets, each of which by itself is extremely risky. If, however, it is always the case that when one of the assets has a high return, the other has a low return, the return on a combination of these two assets in a portfolio may be constant. Thus, the return on the portfolio may be risk free whereas each of the assets has a highly uncertain return. The discussion of such an

3. See Marshall E. Blume, "Portfolio Theory: A Step Towards Its Practical Application," forthcoming *Journal of Business;* Eugene F. Fama, "The Behavior of Stock Market Prices," *Journal of Business* (1965), 34-105; Eugene F. Fama, Lawrence Fisher, Michael Jensen, and Richard Roll, "The Adjustment of Stock Prices to New Information," *International Economic Review* (1969), 1-21; Michael Jensen, "Risk, the Pricing of Capital Assets, and the Evaluation of Investment Portfolios," *Journal of Business* (1969), 167-247; Benjamin F. King, "Market and Industry Factors in Stock Price Behavior," *Journal of Business* (1966), 139-90; and William F. Sharpe, "Mutual Fund Performance," *Journal of Business* (1966), 119-38.

4. The linearity assumption of the model should not be confused with the equilibrium requirement of William F. Sharpe, "Capital Asset Prices: A Theory of Market Equilibrium Under Conditions of Risk," *Journal of Finance* (1964), 425-42, which states that $\alpha_i = (1 - \beta_i)\ R_F$, where $R_F$ is the risk free rate. It is quite possible that this equality does not hold and at the same time that the market model is linear.

5. King, *op. cit.*

6. Eugene F. Fama, "Risk, Return, and Equilibrium" (Report No. 6831, University of Chicago, Center for Mathematical Studies in Business and Economics, June, 1968).

7. Jensen, *op. cit.*

obvious point may seem unwarranted, but there is very little empirical work which indicates that people do in fact behave according to it.

Now if an individual is willing to judge the risk inherent in a portfolio solely in terms of the variance of the future aggregate returns, the risk of a portfolio of n securities with an equal amount invested in each, according to the market model, will be given by

$$\text{Var}\,(\tilde{W}_t) = \left(\sum_{i=1}^{n} \frac{1}{n}\beta_i\right)^2 \text{Var}\,(\tilde{M}_t) + \sum_{i=1}^{n} \left(\frac{1}{n}\right)^2 \text{Var}\,(\tilde{\varepsilon}_{it}) \qquad (2)$$

where $\tilde{W}_t$ is the return on the portfolio. Equation (2) can be rewritten as

$$\text{Var}\,(\tilde{W}_t) = \bar{\beta}^2\,\text{Var}\,(\tilde{M}_t) + \frac{\overline{\text{Var}\,(\tilde{\varepsilon})}}{n} \qquad (3)$$

where the bar indicates an average. As one diversifies by increasing the number of securities n, the last term in equation (3) will decrease. Evans and Archer[8] have shown empirically that this process of diversification proceeds quite rapidly, and with ten or more securities most of the effect of diversification has taken place. For a well diversified portfolio, Var $(\tilde{W}_t)$ will approximate $\bar{\beta}^2$ Var $(\tilde{M}_t)$. Since Var $(\tilde{M}_t)$ is the same for all securities, $\bar{\beta}$ becomes a measure of risk for a portfolio and thus $\beta_i$, as it contributes to the value of $\bar{\beta}$, is a measure of risk for a security. The larger the value of $\beta_i$, the more risk the security will contribute to a portfolio.[9]

B. *The Equilibrium Approach*

Using the market model, Sharpe[10] and Lintner,[11] as clarified by Fama,[12] have developed a theory of equilibrium in the capital markets. This theory relates the risk premium for an individual security, $E(\tilde{R}_{it}) - R_F$, where $R_F$ is the risk free rate, to the risk premium of the market, $E(\tilde{M}_t) - R_F$, by the formula

$$E(\tilde{R}_{it}) - R_F = \beta_i[E(\tilde{M}_t) - R_F]. \qquad (4)$$

The risk premium for an individual security is proportional to the risk premium for the market. The constant of proportionality $\beta_i$ can therefore be interpreted as a measure of risk for individual securities.

8. John L. Evans and Stephan H. Archer, "Diversification and the Reduction of Dispersion: An Empirical Analysis," *Journal of Finance* (1968), 761-68.

9. This argument has been extended to a non-Gaussian, symmetric stable world by E. F. Fama, "Portfolio Analysis in a Stable Paretian Market," *Management Science* (1965), 404-19; and P. A. Samuelson, "Efficient Portfolio Selection for Pareto-Levy Investments," *Journal of Financial and Quantitative Analysis* (1967), 107-22.

10. Sharpe, "Capital Asset Prices," *op. cit.*

11. John Lintner, "The Valuation of Risk Assets and the Selection of Risky Investments in Stock Portfolios and Capital Budgets," *Review of Economics and Statistics* (1965), 13-37.

12. Eugene F. Fama, "Risk, Return, and Equilibrium: Some Clarifying Comments," *Journal of Finance* (1968), 29-40.

This theory of equilibrium, although theoretically sound, is based upon numerous assumptions which obviously do not hold in the real world. A theoretical model, however, should not be judged by the accuracy of its assumptions but rather by the accuracy of its predictions. The empirical work of Friend and Blume[13] suggests that the predictions of this model are seriously biased and that this bias is primarily attributable to the inaccuracy of one key assumption, namely that the borrowing and lending rates are equal and the same for all investors. Therefore, although Sharpe's and Lintner's theory of equilibrium can be used as a justification for $\beta_i$ as measure of risk, it is a weaker and considerably less robust justification than that provided by the portfolio approach.

## III. The Sample and Its Properties

The sample was taken from the updated Price Relative File of the Center for Research in Security Prices at the Graduate School of Business, University of Chicago. This file contains the monthly investment relatives, adjusted for dividends and capital changes of all common stocks listed on the New York Stock Exchange during any part of the period from January 1926 through June 1968, for the months in which they were listed. Six equal time periods beginning in July 1926 and ending in June 1968 were examined. Table 1 lists these six periods and the number of companies in each for which there was a complete history of monthly return data. This number ranged from 415 to 890.

The investment relatives for a particular security and a particular period were regressed[14] upon the corresponding combination market link relatives, which were originally prepared by Fisher[15] as a measure of the market factor. This process was repeated for each security and each period, yielding, for instance, in the July 1926 through June 1933 period, 415 separate regressions. The average coefficient of determination of these 415 regressions was 0.51. The corresponding average coefficients of determination for the next five periods were, respectively, 0.49, 0.36, 0.32, 0.25, and 0.28. These figures are consistent with King's findings[16] in that the proportion of the variance of returns explained by the market declined steadily until 1960 when his sample terminated. Since 1960, the importance of the market factor has increased slightly according to these figures.

Table 1, besides giving the number of companies analyzed, summarizes the distributions of the estimated beta coefficients in terms of the means, standard deviations, and various fractiles of these distributions. In addition, the number of estimated betas which were less than zero is given. In three of the periods,

13. Irwin Friend and Marshall Blume, "Measurement of Portfolio Performance Under Uncertainty," *American Economic Review* (1970), 561-75.

14. John Wise, "Linear Estimators for Linear Regression Systems Having Infinite Variances," (Berkeley-Stanford Mathematics-Economics Seminar, October, 1963) has given some justification for the use of least squares in estimating coefficients of regressions in which the disturbances are non-normal symmetric stable variates.

15. Lawrence Fisher, "Some New Stock-Market Indexes," *Journal of Business* (1966), 191-225.

16. King, *op. cit.*

TABLE 1

DESCRIPTIVE SUMMARY OF ESTIMATED BETA COEFFICIENTS

| Period | Number of Companies | Mean | Standard Deviation | Number of BETAS less than Zero | Fractiles | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | .10 | .25 | .50 | .75 | .90 |
| 7/26-6/33 | 415 | 1.051 | 0.462 | 1 | 0.498 | 0.711 | 1.023 | 1.352 | 1.616 |
| 7/33-6/40 | 604 | 1.036 | 0.474 | 0 | 0.436 | 0.701 | 1.015 | 1.349 | 1.581 |
| 7/40-6/47 | 731 | 0.990 | 0.504 | 0 | 0.500 | 0.643 | 0.872 | 1.186 | 1.606 |
| 7/47-6/54 | 870 | 1.010 | 0.409 | 2 | 0.473 | 0.727 | 0.996 | 1.263 | 1.565 |
| 7/54-6/61 | 890 | 0.998 | 0.423 | 0 | 0.458 | 0.678 | 0.984 | 1.250 | 1.558 |
| 7/61-6/68 | 847 | 0.962 | 0.390 | 4 | 0.475 | 0.681 | 0.934 | 1.199 | 1.491 |

none of the estimated betas was negative. Of the 4357 betas estimated in all six periods, only seven or 0.16 per cent were negative. This means that although the inclusion of a stock which moves counter to the market can reduce the risk of a portfolio substantially, there are virtually no opportunities to do this. Nearly every stock appears to move with the market.[17]

## IV. The Stationarity of Beta over Time

No economic variable including the beta coefficient is constant over time. Yet for some purposes, an individual might be willing to act *as if* the values of beta for individual securities were constant or stationary over time. For example, a person who wishes to assess the future risk of a well diversified portfolio is really interested in the behavior of averages of the $\beta_i$'s over time and not directly in the values for individual securities. For the purposes of evaluating a portfolio, it may be sufficient that the historical values of $\beta_i$ be unbiased estimates of the future values for an individual to act *as if* the values of the $\beta_i$'s for individual securities are stationary over time. This is because the errors in the assessment of an average will tend to be less than those of the components of the average providing that the errors in the assessments of the components are independent of each other.[18] Yet, a statistician or a person who wishes to assess the risk of an individual security may have completely different standards in determining whether he would act as if the $\beta_i$'s are constant over time. The remainder of the paper examines the stationarity of the $\beta_i$'s from the point of view of a person who wishes to analyze a portfolio.

### A. *Correlations*

To examine the empirical behavior of the risk measures for portfolios over time, arbitrary portfolios of n securities were selected as follows: The estimates of $\beta_i$ were derived using data from the first period, July 1926 through June 1933, and were then ranked in ascending order.[19] The first portfolio of n securities consisted of those securities with the n smallest estimates of $\beta_i$. The second portfolio consisted of those securities with the next n smallest estimates of $\beta_i$, and so on until the number of securities remaining was less than n. The number of securities n was allowed to vary over 1, 2, 4, 7, 10, 20, 35, 50, 75, and 100. This process was repeated for each of the next four periods.

Table 2 presents the product moment and rank order correlation coefficients between the risk measures for portfolios of n securities assuming an equal investment in each security estimated in one period and the corresponding risk

17. The use of considerably less than seven years of monthly data such as two or three years to estimate the beta coefficient results in a larger proportion of negative estimates. This larger proportion is probably due to sampling errors which, as documented in Richard Roll, "The Efficient Market Model Applied to U. S. Treasury Bill Rates," (Unpublished Ph.D. thesis, Graduate School of Business, University of Chicago, 1968) may be quite large for models with non-normal symmetric stable disturbances.

18. This property of averages does not hold for all distributions (*cf.* Eugene F. Fama, "Portfolio Analysis in a Stable Paretian Market"), but for the distributions associated with stock market returns it almost certainly holds.

19. Only securities which also had complete data in the next seven year period were included in this ranking.

measure for the same portfolio estimated in the next period.[20] The risk measure calculated using the earlier data might be regarded as an individual's assessment of the future risk, and the measure calculated using the later data can be regarded as the realized risk. Thus, these correlation coefficients can be interpreted as a measure of the accuracy of one's assessments, which in this case are simple extrapolations of historical data.

TABLE 2

PRODUCT MOMENT AND RANK ORDER CORRELATION COEFFICIENTS OF BETAS FOR PORTFOLIOS OF N SECURITIES

| Number of Securities per Portfolio | 7/26-6/33 and 7/33-6/40 | | 7/33-6/40 and 7/40-6/47 | | 7/40-6/47 and 7/47-6/54 | | 7/47-6/54 and 7/54-6/61 | | 7/54-6/61 and 7/61-6/68 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | P.M. | Rank | P.M. | Rank | P.M. | Rank | P.M. | Rank | P.M. | Rank |
| 1 | 0.63 | 0.69 | 0.62 | 0.73 | 0.59 | 0.65 | 0.65 | 0.67 | 0.60 | 0.62 |
| 2 | 0.71 | 0.75 | 0.76 | 0.83 | 0.72 | 0.79 | 0.76 | 0.76 | 0.73 | 0.74 |
| 4 | 0.80 | 0.84 | 0.85 | 0.90 | 0.81 | 0.89 | 0.84 | 0.84 | 0.84 | 0.85 |
| 7 | 0.86 | 0.90 | 0.91 | 0.93 | 0.88 | 0.93 | 0.87 | 0.88 | 0.88 | 0.89 |
| 10 | 0.89 | 0.93 | 0.94 | 0.95 | 0.90 | 0.95 | 0.92 | 0.93 | 0.92 | 0.93 |
| 20 | 0.93 | 0.99 | 0.97 | 0.98 | 0.95 | 0.98 | 0.95 | 0.96 | 0.97 | 0.98 |
| 35 | 0.96 | 1.00 | 0.98 | 0.99 | 0.95 | 0.99 | 0.97 | 0.98 | 0.97 | 0.97 |
| 50 | 0.98 | 1.00 | 0.99 | 0.98 | 0.98 | 0.99 | 0.98 | 0.98 | 0.98 | 0.97 |

The values of these correlation coefficients are striking. For the assessments based upon the data from July 1926 through June 1933 and evaluated using data from July 1933 through June 1940, the product moment correlations varied from 0.63 for single securities to 0.98 for portfolios of 50 securities. The high value of the latter coefficient indicates that substantially all of the variation in the risk among portfolios of 50 securities can be explained by assessments based upon previous data. The former correlation suggests that assessments for individual securities derived from historical data can explain roughly 36 per cent of the variation in the future estimated values, leaving about 64 per cent unexplained.[21]

These results, which are typical of the other periods, suggest that at least as measured by the correlation coefficients, naively extrapolated assessments of future risk for larger portfolios are remarkably accurate, whereas extrapolated assessments of future risk for individual securities and smaller portfolios are of some, but limited value in forecasting the future.

## B. *A Closer Examination*

Table 3 presents the actual estimates of the risk parameters for portfolios of 100 securities for successive periods. For all five different sets of portfolios, the rank order correlations between the successive estimates are one, but there is obviously some tendency for the estimated values of the risk parameter to

20. Because of the small number of portfolios of 100 securities, correlations are not presented in Table 2 for these portfolios.

21. This large magnitude of unexplained variation may make the beta coefficient an inadequate measure of risk for analyzing the cost of equity for an individual firm although it may be adequate for cross-section analyses of cost of equity.

TABLE 3

ESTIMATED BETA COEFFICIENTS FOR PORTFOLIOS OF 100 SECURITIES IN TWO SUCCESSIVE PERIODS

| Portfolio | 7/26-6/33 | 7/33-6/40 | 7/33-6/40 | 7/40-6/47 | 7/40-6/47 | 7/47-6/54 | 7/47-6/54 | 7/54-6/61 | 7/54-6/61 | 7/61-6/68 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.528 | 0.610 | 0.394 | 0.573 | 0.442 | 0.593 | 0.385 | 0.553 | 0.393 | 0.620 |
| 2 | 0.898 | 1.004 | 0.708 | 0.784 | 0.615 | 0.776 | 0.654 | 0.748 | 0.612 | 0.707 |
| 3 | 1.225 | 1.296 | 0.925 | 0.902 | 0.746 | 0.887 | 0.832 | 0.971 | 0.810 | 0.861 |
| 4 | | | 1.177 | 1.145 | 0.876 | 1.008 | 0.967 | 1.010 | 0.987 | 0.914 |
| 5 | | | 1.403 | 1.354 | 1.037 | 1.124 | 1.093 | 1.095 | 1.138 | 0.995 |
| 6 | | | | | 1.282 | 1.251 | 1.245 | 1.243 | 1.337 | 1.169 |

change gradually over time. This tendency is most pronounced in the lowest risk portfolios, for which the estimated risk in the second period is invariably higher than that estimated in the first period. There is some tendency for the high risk portfolios to have lower estimated risk coefficients in the second period than in those estimated in the first. Therefore, the estimated values of the risk coefficients in one period are biased assessments of the future values, and furthermore the values of the risk coefficients as measured by the estimates of $\beta_i$ tend to regress towards the means with this tendency stronger for the lower risk portfolios than the higher risk portfolios.

### C. *A Method of Correction*

In so far as the rate of regression towards the mean is stationary over time, one can in principle correct for this tendency in forming one's assessments. An obvious method is to regress the estimated values of $\beta_i$ in one period on the values estimated in a previous period and to use this estimated relationship to modify one's assessments of the future.

Table 4 presents these regressions for five successive periods of time for individual securities.[22] The slope coefficients are all less than one in agreement with the regression tendency, observed above. The coefficients themselves do change over time, so that the use of the historical rate of regression to correct

TABLE 4

MEASUREMENT OF REGRESSION TENDENCY OF ESTIMATED BETA COEFFICIENTS FOR INDIVIDUAL SECURITIES

| Regression Tendency Implied Between Periods | $\beta_2 = a + b\beta_1$ |
|---|---|
| 7/33-6/40 and 7/26-6/33 | $\beta_2 = 0.320 + 0.714\beta_1$ |
| 7/40-6/47 and 7/33-6/40 | $\beta_2 = 0.265 + 0.750\beta_1$ |
| 7/47-6/54 and 7/40-6/47 | $\beta_2 = 0.526 + 0.489\beta_1$ |
| 7/54-6/61 and 7/47-6/54 | $\beta_2 = 0.343 + 0.677\beta_1$ |
| 7/61-6/68 and 7/54-6/61 | $\beta_2 = 0.399 + 0.546\beta_1$ |

22. The reader should not think of these regressions as a test of the stationarity of the risk of securities over time but rather merely as a test of the accuracy of the assessments of future risk which happen to be derived as historical estimates. In this test of accuracy, the independent variable in these regressions is measured without error, so that the estimated coefficients are unbiased. In the test of the stationarity of the risk measures over time, the independent variable would be measured with error, so that the coefficients in Table 4 would be biased.

for the future rate will not perfectly adjust the assessments and may even overcorrect by introducing larger errors into the assessments than were present in the unadjusted data.

To examine the efficacy of using historical rates of regression to correct one's assessments, the estimated risk coefficients for the individual securities for the period from July 1933 through June 1940 were modified using the first equation in Table 4 to obtain adjusted risk coefficients under the assumption that the future rate of regression will be the same as the past. This process was repeated for each of the next three periods using respectively the next three equations in Table 4 to estimate the rate of regression.

Table 5 compares these adjusted assessments with the unadjusted assessments which were used in Tables 2 and 3. For the portfolios selected previously using the data from July 1933 through June 1940, both the unadjusted

TABLE 5
MEAN SQUARE ERRORS BETWEEN ASSESSMENTS AND FUTURE ESTIMATED VALUES

| Number of Sec./ Port. | Assessments Based Upon | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 7/33-6/40 | | 7/40-6/47 | | 7/47-6/54 | | 7/54-6/61 | |
| | unadjusted | adjusted | unadjusted | adjusted | unadjusted | adjusted | unadjusted | adjusted |
| 1 | 0.1929 | 0.1808 | 0.1747 | 0.1261 | 0.1203 | 0.1087 | 0.1305 | 0.1013 |
| 2 | 0.0915 | 0.0813 | 0.1218 | 0.0736 | 0.0729 | 0.0614 | 0.0827 | 0.0535 |
| 4 | 0.0538 | 0.0453 | 0.0958 | 0.0483 | 0.0495 | 0.0381 | 0.0587 | 0.0296 |
| 7 | 0.0323 | 0.0247 | 0.0631 | 0.0276 | 0.0387 | 0.0281 | 0.0523 | 0.0231 |
| 10 | 0.0243 | 0.0174 | 0.0535 | 0.0220 | 0.0305 | 0.0189 | 0.0430 | 0.0169 |
| 20 | 0.0160 | 0.0090 | 0.0328 | 0.0106 | 0.0258 | 0.0139 | 0.0291 | 0.0089 |
| 35 | 0.0120 | 0.0055 | 0.0266 | 0.0080 | 0.0197 | 0.0101 | 0.0302 | 0.0089 |
| 50 | 0.0096 | 0.0046 | 0.0192 | 0.0046 | 0.0122 | 0.0097 | 0.0237 | 0.0064 |
| 75 | 0.0081 | 0.0035 | 0.0269 | 0.0067 | 0.0112 | 0.0078 | 0.0193 | 0.0056 |
| 100 | 0.0084 | 0.0020 | 0.0157 | 0.0035 | 0.0114 | 0.0084 | 0.0195 | 0.0056 |

and adjusted assessments of future risk were obtained. The accuracy of these two alternative methods of assessment were compared through the mean squared errors of the assessments versus the estimated risk coefficients in the next period, July 1940 through June 1947.[23] This process was repeated for each of the next three periods.

For individual securities as well as portfolios of two or more securities, the assessments adjusted for the historical rate of regression are more accurate than the unadjusted or naive assessments. Thus, an improvement in the accuracy of one's assessments of risk can be obtained by adjusting for the historical rate of regression even though the rate of regression over time is not strictly stationary.

23. The mean square error was calculated by $\frac{\Sigma(\beta_1 - \beta_2)^2}{n}$ where $\beta_1$ is the assessed value of the future risk, $\beta_2$ is the estimated value of the risk, and n is the number of portfolios. In using an estimate of beta rather than the actual value, the mean square error will be biased upwards, but the effect of this bias will be the same for both the adjusted and unadjusted assessments.

## V. Conclusion

This paper examined the empirical behavior of one measure of risk over time. There was some tendency for the estimated values of these risk measures to regress towards the mean over time. Correcting for this regression tendency resulted in considerably more accurate assessments of the future values of risk.

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Please see Exhibit N-M2-10-AMPCO/IGUA-9(d)_Attachment 1.xlsx on the OEB's RDS.

Ontario Energy Association (OEA)

Answer to Interrogatory from
Association of Major Power Consumers in Ontario (AMPCO) / Industrial Gas Users Association (IGUA)

INTERROGATORY

Reference:

On pages 69-70, Concentric discusses its market risk premium (MRP) estimates it uses in its CAPM Ke calculations, and its final CAPM Ke estimates.

On page 70, Concentric states:

> *Although we have presented our CAPM results using three different MRPs (i.e., an average of the forward-looking and historical MRP, a forward-looking MRP, and an actual historical MRP), as discussed above, our recommended ROE for Ontario's utilities uses the CAPM results with the actual historical MRP.*

Question(s):

a) Please provide the source documents, as well as workpapers including all data and calculations used to estimate the historical MRP estimates for Canada and the U.S.

b) Please confirm that the historical MRP estimate for Canada of 5.68% is 35% higher than the arithmetic average estimate of 4.2% provided in the Dimson et al. (2016) study[41] (which examines MRPs over the 1900-2015 period), and is 72% above the geometric average of 3.3% determined in the same study. If not confirmed please provide the actual percentage differences.

c) Please confirm that the historical MRP estimate for the U.S. of 7.17% is 24% higher than the arithmetic average estimate of 5.8% provided in the Dimson et al. (2016) study (which examines MRPs over the 1900-2015 period), and is 63% above the geometric average of 4.4% determined in the same study. If not confirmed please provide the actual percentage differences.

[4] This study is included as Exhibit AY of Exhibit M4 (Dr. Cleary's evidence), and is summarized in Figure 12 on page 40 of that evidence.

d) Please explain why Concentric's historical MRP estimates are so much higher than those included in the Dimson et al. (2016) study, given the significant overlap of a large number of annual observations included in both estimates.

e) Please confirm that Concentric estimates its forward-looking Canadian MRP of 12.09% using the Constant Growth DCF Model, with calculations provided in Exhibit CEA-6.1 of the Appendix that uses an expected dividend yield of 3.60% and an expected growth rate of 11.95%, which translates into an expected market return of 15.56%. Concentric then subtracts its RF estimate of 3.46% to arrive at a Canadian forward-looking MRP of 12.09%. If not confirmed, please explain.

f) Please confirm that the company growth estimates used to calculate the average market growth expectations for the Canadian market are based on only 60 (of 230) company growth estimates, with 170 company growth estimates not being available. If not confirmed, please explain.

g) Please confirm that the company growth estimates used to calculate the average market growth expectations for the Canadian market range from +194.72% to -29.16%. If not confirmed, please provide the range in growth estimates for the companies used to estimate the market growth estimate.

h) Given the lack of growth data for 170 (74%) of the 230 companies included in the S&P/TSX Index, as well as the wide variability in such growth estimates that are available, please explain why Concentric did not follow common finance practice and simply use its estimate of long-term nominal GDP growth of 3.84% for Canada as its growth estimate and combine it with the average expected S&P/TSX dividend yield of 3.60% to estimate the expected return on the market (which would equal 7.44%), and hence the MRP.

i) Please confirm that Concentric estimates its forward-looking U.S. MRP of 11.30% using the Constant Growth Model, with calculations provided in Exhibit CEA-6.1 of the Appendix that uses an expected dividend yield of 1.73% and an expected growth rate of 13.71%, which translates into an expected market return of 15.45%. Concentric then subtracts its U.S. RF estimate of 4.14% to arrive at a U.S. forward-looking MRP of 11.30%. If not confirmed, please explain.

j) Please confirm that the company growth estimates used to calculate the average market growth expectations for the U.S. market range from +189.05% to -24.00. If not confirmed, please provide the range in growth estimates for the companies used to estimate the market growth estimate.

k) Can Concentric please reconcile such high predicted growth rates in earnings (and dividends) for Canadian (11.95%) and U.S. (13.71%) companies with Concentrics'

own forecast of expected nominal GDP growth rate for the Canadian and U.S. economies of 3.84% and 4.04% respectively? Please explain why we can expect corporate profits to grow at 12-14%, despite the respective economies only growing at an annual rates that are less than one-third of these growth figures at around 4%.

l) Can Concentric please reconcile such high predicted expected market returns for Canadian (**15.56%**) and U.S. (**15.45%**) companies with the long-term average expectations of market professionals for expected market returns of **6.1%** for Canada and 6.8% for the U.S., as provided in Table 7 of Exhibit M4 (Dr. Cleary's evidence)?

m) Please explain why Concentric disregards the forward-looking and average MRP CAPM Ke estimates.

Response:

a) Please see AMPCO/IGUA-10(a), Attachments 1-3 for the requested workpapers.

b) Confirmed.

c) Confirmed.

d) Dimson's estimates are actually higher than those used by Concentric. As explained in Concentric's report, Exhibit M2, the historical MRPs for Canada and the U.S. are the values reported by Kroll, which publishes information on historical market returns and government bond yields. The Canadian data cover the period from 1919-2023, while the U.S. data are from 1926-2023. The historical MRP reported by Kroll is based on the annual return on large company stocks (i.e., the S&P 500 in the U.S. and the TSX in Canada) less the income-only return on 20-year government bonds, equal to 7.17% for the U.S. and 5.68% for Canada. The Dimson study cited by Dr. Cleary used a different time period than the Kroll data that Concentric relied upon (1900-2015, vs. 1919-2023). Dimson computes a real return on equities, inflation, and real bond returns over this period. If you add Dimson's real equity returns to inflation and subtract the real bond yields, all reported by Dimson, these estimates are higher than those used by Concentric from Kroll, resulting in an MRP of 8.8% in the U.S. and 8.5% in Canada.

e) Confirmed.

f) Confirmed as to the number of companies with growth rates. By Concentric's count, there are 222 companies listed on Exhibit CEA-6.1, meaning that 162 companies do not have a reported growth rate from Bloomberg.

g) Confirmed.

h) Concentric used the approach that has been adopted by the Federal Energy Regulatory Commission and several state utility regulators to calculate the forward-looking MRP, which is to compute the total return for the broad market (in this case, the TSX Index) using a Constant Growth DCF model and then to subtract the risk-free rate.

i) Confirmed. The U.S. calculations are provided in Exhibit CEA-6.2.

j) Not confirmed. The EPS growth rates for the S&P 500 companies range from 188.0% to -32.44%.

k) Concentric has considered whether the current short-term EPS projections for the S&P companies are sustainable over the longer-term. That is the main reason why Concentric did not rely on the forward-looking MRP for either Canada or the U.S. in its CAPM analysis. Rather, as stated in Concentric's report, Exhibit M2, Concentric's CAPM analysis uses the historical MRP from Kroll for Canada and the U.S.

l) The projected market returns for Canada and the U.S. reported in Dr. Cleary's evidence are not consistent with the historical returns that investors have earned in the TSX and S&P 500 indexes over the long-term. Concentric sees no reason to believe that future returns in equity markets will be substantially lower (i.e., in the range of 5.0% lower) than historical returns in both countries. Nevertheless, as explained in the response to subpart (k), Concentric has not used the forward-looking MRP in its CAPM analysis in this proceeding.

m) Concentric disregards the forward-looking MRP for the reason stated in subpart (k) above – that is, we have concerns with the level of short-term EPS growth rates for companies in the S&P 500 and TSX indexes and whether those growth rates are sustainable. Concentric has used the historical MRPs for Canada and the U.S., although we would observe that the level of government bond yields is somewhat lower than the historical average yields on government bonds used by Kroll to calculate the historical MRP. There is an inverse relationship between interest rates and the equity risk premium, which suggests that the historical MRPs from Kroll for Canada and the U.S. are likely somewhat understated given current expectations for government bond yields.

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Please see Exhibit N-M2-10-AMPCO/IGUA-10(a)_Attachment 1.xlsx on the OEB's RDS.

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Please see Exhibit N-M2-10-AMPCO/IGUA-10(a)_Attachment 2.xlsx on the OEB's RDS.

This page is intentionally left blank. Due to size, this Attachment has not been included.

Please see Exhibit N-M2-10-AMPCO/IGUA-10(a)_Attachment 3.xlsx on the OEB's RDS.

Ontario Energy Association (OEA)

Answer to Interrogatory from
Association of Major Power Consumers in Ontario (AMPCO) / Industrial Gas Users Association (IGUA)

INTERROGATORY

Reference:

On pages 74-79, Concentric discusses what it refers to as its risk premium analysis. This analysis uses the identical approach used by Mr. Coyne in the 2018 Alberta GCOC proceedings, which Mr. Coyne referred to as his Bond Yield Plus Risk Premium Model (BYPRPM) during those proceedings.

In its 2018 GCOC Decision (Decision 22570-D01-2018, paras. 392-393), the Alberta Utilities Commission (AUC) concluded that (bold added for emphasis):

> *The BYPRPMs of Mr. Hevert and Mr. Coyne estimate the risk premium component by comparing the approved ROEs to the long-term government bond yields in place at the time, thus capturing the inverse relationship. However, the Commission **has two concerns** with Mr. Hevert's and Mr. Coyne's approach. First, because their models estimate the risk premium in excess of long-term government bond yields, i.e., the risk-free rate, **they lose the advantage of incorporating the observable market data on utilities' credit spreads**, as compared to Dr. Cleary's approach.*
>
> *Second, these models use the approved ROEs of other regulators in the U.S. as proxies for the market return. In the Commission's view, although observable, the ROEs approved for the U.S. utilities are **not strictly market data**. Accordingly, the main assumption of these models, that the approved ROEs represent market return, does not hold, because the approved ROEs would be heavily influenced by the ROEs awarded by other regulators.*

Question(s):

a) Please confirm that the Risk Premium approach discussed on pages 74-79 of Concentric's evidence is the same model that Mr. Coyne labelled as "BYPRPM" during the 2018 proceedings and which is referenced in the passage cited above. If not confirmed please provide an exhaustive explanation of differences between that previous model and the current model relied on by Mr. Coyne.

b) Does Mr. Coyne agree with the AUC's concerns that using government bond yields loses the advantage of incorporating the observable market data on utilities' credit spreads? If not, please explain why not.

c) Does Mr. Coyne agree with the AUC's concerns that approved ROEs are not strictly market data, and are heavily influenced by ROE's awarded by other regulators? If not, please explain why not.

d) Would Mr. Coyne agree that allowed ROEs in the U.S. do not account for issues such as jurisdiction-specific legislation and case law, nor do they reflect Ontario utility-specific business risks? If not, please explain why not.

Response:

a) Confirmed.

b) Regardless of whether the bond yield plus risk premium model is based on the relationship between government bond yields or utility bond yields, the regression analysis demonstrates that there is an inverse relationship between interest rates and the equity risk premium. While the AUC expressed concerns with the risk premium model in 2018, Concentric notes that the AUC implemented an ROE formula in October 2023 that is based on the relationship between authorized ROEs and changes in government bond yields and utility credit spreads. The recently adopted AUC formula is similar in many respects to the formula the OEB approved in December 2009. Further, the BCUC recently issued a decision in which it based the authorized ROE for FortisBC Energy and FortisBC Inc. on an average of the multi-stage DCF model, the CAPM using an average market risk premium, and the bond yield plus risk premium model. With regard to the use of the risk premium model, the BCUC explained on page iv of Decision and Order G-236-23:

> In the Panel's view, relying on more models is especially important at times when the pure market-based models like the DCF and the CAPM tend to get whipsawed by volatility in the market. The Panel finds that considerable weight should be given to the use of a Risk Premium Model for the purposes of determining the appropriate ROE for FEI and FBC given the recent volatility in the market and economic conditions.

c) No, Concentric does not agree with those concerns. The recent BCUC decision is instructive on this point. On page 117 of Decision and Order G-236-23, the BCUC writes:

> Consequently, the Panel considers that circularity concerns alone do not justify eliminating reliance on the Risk Premium Model, or any particular model, for determining the appropriate ROE for FEI and FBC. Instead, it is a factor in the overall consideration of

model results.

d) No model accounts for jurisdiction-specific legislation and case law. This risk is mitigated by the fact that our Risk Premium analysis is based on more than 900 electric utility rate case decisions and 750 gas distribution company rate case decisions in the U.S. since 1992. In addition, Concentric has presented a risk premium analysis based on Canadian ROE decisions dating back to 2000. Furthermore, the OEB previously determined in the 2009 GCOC Decision that the operating risks and the regulatory environment for utilities were sufficiently similar between Canada and the U.S. to allow for the use of U.S. companies and U.S. return data in setting the authorized ROE for Ontario's utilities.

Ontario Energy Association (OEA)

Answer to Interrogatory from
Association of Major Power Consumers in Ontario (AMPCO) / Industrial Gas Users Association (IGUA)

INTERROGATORY

Reference:

On pages 79-84, Concentric again returns to its heavy emphasis on awarded ROEs and ERs in other jurisdictions (particularly U.S. deemed ratios), and provides a summary table of its analysis in Figure 27 on page 80.

Question(s):

a) Please provide the data and workpapers (in excel format), including all formulae used to construct Figure 27.

   (Note: It is not clear in Concentric's evidence which Canadian utilities were included in these average estimates, or how the averages are determined. For example, on page 79, Concentric states that "The authorized ROE for Canadian investor-owned gas distribution companies currently ranges from 8.90 percent (Energir) to 10.65 percent (Eastward Energy), with an average of 9.23 percent." However, Eastward Energy (a very small utility) is not included in Figure 27, so presumably Concentric may include other Canadian utilities it does not include in that figure.)

b) Please confirm that the evidence provided in Figure 27 in fact shows that Ontario utilities are in line with Concentric's estimated averages of awarded ROEs and ERs for Canadian utilities. If not confirmed, please explain.

Response:

a) The information provided in Figure 27 for Canadian electric utilities and Canadian gas distributors is based on the most recent cost of capital decisions for each of those companies. The Canadian mean and median returns and equity ratios reported in Figure 27 are based on the Canadian electric and gas companies listed in that figure. Please see AMPCO/IGUA-12(a), Attachment 1 for the requested workpapers supporting the Canadian authorizations reported in Figure 27. Please see SEC-47(b), CONFIDENTIAL Attachment 1 for the requested workpapers supporting the U.S. averages reported in Figure 27.

b) Confirmed. However, the average authorized ROEs and equity ratios for U.S. electric and gas utilities are higher than their Canadian peers. Because Ontario's utilities are competing for capital in North American capital markets, they must offer investors the opportunity to earn equity returns that are comparable to other North American utilities of similar risk (including those in the U.S.) and capital structures that result in comparable financial risk.

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Please see Exhibit N-M2-10-AMPCO/IGUA-12(a)_Attachment 1.xlsx on the OEB's RDS.

Ontario Energy Association (OEA)

Answer to Interrogatory from
Association of Major Power Consumers in Ontario (AMPCO) / Industrial Gas Users Association (IGUA)

INTERROGATORY

Reference:

On pages 85-94, Concentric discusses the OEB formula results over the 2010-24 period.

Question(s):

a) Please provide the data and workpapers (in excel format), including all formulae used to construct Figures 28, 29 and 30.

b) Please confirm that the evidence provided in Figure 28 and in Figure 29 in fact shows that awarded ROEs for Ontario utilities over the period examined were generally above the Canadian averages they report, and on average were higher than the Canadian period averages for the Canadian Electric estimate (Figure 28) and the Canadian Gas estimate (Figure 29). If not confirmed, please explain.

c) Concentric's main argument in the referenced section of its report seems to be that since allowed ROEs in the U.S. are higher than those for Ontario utilities, the allowed Ontario ROEs and ERs need to be increased in order to satisfy the FRS (even though they are above Canadian deemed ROEs). Please confirm this reading of Concentric's position in this section, and/or elaborate as appropriate.

d) Please confirm that Figure 30 shows that in 2009 the base ROE was 9.75%, and the base LCBF (or RF) was 4.25%, so that the allowed ROE-RF spread was 5.5% at the time. Similarly, the base Util Spread of 1.415% reported in Figure 30 implies a base A-rated utility yield of 5.665% (i.e., 4.25% + 1.415%), and an allowed ROE to A-rated utility yield spread of 4.09%. If not confirmed, please explain.

e) Please confirm that Figure 30 shows that in 2024 the allowed ROE was 9.21%, and the LCBF (or RF) estimate was 3.05% (i.e. 3.25% - 0.196% 10/30 spread), so that the allowed ROE-RF spread was 6.16% at the time (0.66% above the base ROE-RF spread of 5.5%). If not confirmed please explain.

f) Please confirm that the 2024 Util Spread of 1.525% reported in Figure 30 implies a 2024 A-rated utility yield of 4.575% (i.e. 3.05% + 1.525%), and an allowed ROE to A-

rated utility yield spread of 4.64% (0.55% above the base ROE-A-yield spread of 4.09%). If not confirmed, please explain.

g) Please confirm that Figure 30 shows that over the 2010-24 period the average allowed ROE was 9.08%, and the average LCBF (or RF) estimate was 2.84% (i.e., 2.44% + 0.395% 10/30 spread), so that the average allowed ROE-RF spread was 6.24% over the period (0.74% above the base ROE-RF spread of 5.5%). If not confirmed please explain.

h) Please confirm that the average Util spread of 1.493% reported in Figure 30 implies an average A-rated utility yield of 4.33% (i.e., 2.84% + 1.493%) over the period, and an allowed ROE A-rated utility yield spread of 4.75% (0.66% above the base ROE-A-yield spread of 4.09%). If not confirmed, please explain.

i) Please confirm that the statistics provided in questions (d)-(h) above demonstrate that in Ontario both allowed ROE-RF and ROE-A-yield spreads have widened since 2009, in terms of both the 2024 spreads and the average spreads over the 2010-2024 period. If not confirmed, please explain.

Response:

a) Please see AMPCO_IGUA -13(a), Attachment 1 for the requested workpapers.

b) As shown in the workpapers for Figures 28 and 29, from 2009-2024, the average authorized ROE provided by the OEB formula is 9.04%, the average authorized ROE for Canadian electric utilities in other jurisdictions is 9.03%, and the average authorized ROE for Canadian gas distribution utilities in other jurisdictions is 8.83%. However, as also shown in the workpapers, the average authorized ROE for U.S. electric utilities over this same period is 9.84% and for U.S. gas distribution utilities is 9.74%.

c) Confirmed in part. As stated in the Concentric report, Exhibit M2, at 87, the returns produced by the OEB formula are substantially lower than those for U.S. companies of comparable risk. This is important because Ontario's utilities must compete with other Canadian and U.S. companies to attract capital. Market data indicate that the cost of capital has increased for all North American utilities, including those in Ontario since the Board last examined this issue. Concentric disagrees with the assertion that "they [Ontario ROEs] are above Canadian deemed ROEs." As shown in figures 28 and 29 of Concentric's report, Ontario ROEs currently approximate Canadian average electric and gas ROEs.

d) Confirmed.

e) Confirmed.

f) Confirmed.

g) Confirmed.

h) Confirmed

i) Confirmed, and consistent with the inverse relationship between the level of bond yields and the equity risk premium in allowed ROEs.

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Please see Exhibit N-M2-10-AMPCO/IGUA-13(a)_Attachment 1.xlsx on the OEB's RDS.

Ontario Energy Association (OEA)

Answer to Interrogatory from
Association of Major Power Consumers in Ontario (AMPCO) / Industrial Gas Users Association (IGUA)

INTERROGATORY

Reference:

On pages 94-95, Concentric discusses the LCBF estimate used in the OEB ROE formula. On page 95, Concentric states:

> *The base LCBF in the new AUC formula is based on an average of the forecast of the quarterly 30-year GOC bond yield for each of the four quarters in the coming year from three Canadian investment banks – RBC, TD Bank, and Scotia Bank – which receives a 75% weight, and the current 90-day average 30-year GOC bond yield, which receives a 25% weight. Concentric prefers this latter approach.*

On page 41 Concentric states (bold added for emphasis):

> *Since 2010, the OEB's deemed long-term debt cost rate has had periods of being above and below the Bloomberg index, and* ***averaged 40 bps higher than the index.***

Question(s):

a) Please confirm that Concentric's recommendation to use 25% of actual prevailing yields is reflective of forecast inaccuracy. If not confirmed, please explain.

b) Please confirm that Concentric's recommendation to use 30-year Canada yield forecasts, rather than use Consensus 10-year Canada yield forecasts, and then estimating a 10- vs 30-year Canada yield spread to be added to the forecast, reflects the fact that this spread varies through time. If not confirmed, please explain.

Response:

a) Not confirmed. Concentric's recommendation is to calculate the LCBF based on a weighted average of the forecast provided by three Canadian banks (75% weight) and the current 90-day average yield on the 30-year GOC bond (25% weight). In making this recommendation, there was no consideration given to whether forecasts were accurate or not. Rather, this recommendation is intended to align the LCBF in

the Ontario formula with the way in which the AUC calculates this value in its recently adopted formula in Proceeding 27084. Concentric believes the AUC's approach on this issue is reasonable and gives appropriate weight to both forecast and current bond yields.

b) Confirmed. Concentric agrees with LEI that it is better to use 30-year government bond yield forecasts from major Canadian banks to determine the LCBF in the Ontario formula. The current method of using forecasts from Consensus Economics can be problematic because CE only provides a forecast of 10-year GOC bond yields. When the spread between 10- and 30-year GOC bonds is negative, as it has been in recent months, the resulting 30-year GOC bond yield is distorted and does not reflect investors' long-term expectations that 30-year bond yields are higher than 10-year bond yields.

Ontario Energy Association (OEA)

Answer to Interrogatory from
Association of Major Power Consumers in Ontario (AMPCO) / Industrial Gas Users Association (IGUA)

INTERROGATORY

Reference:

On pages 95-98, Concentric discusses the LCBF and Util Spread adjustment factors used in the OEB ROE formula.

On page 95, Concentric asserts that:

> *Although the positive correlation between the utility cost of equity and LCBF has been historically well-noted, the strength of the relationship has weakened over time.*

On page 98, Concentric recommends changing the adjustment factors for LCBF and Util spread to 0.40 and 0.33 respectively, based on the results of a regression analysis that regresses:

i. *"Authorized ROE", defined as "the data stream of authorized ROEs from almost 1,700 U.S. gas and electric rate cases decided between January 1, 1993, and May 31, 2024"*
ii. *"U.S. Government Bond Yield" defined as "the associated prevailing six-month trailing average 30- year U.S. government bond yield as of the rate case decision date"; and*
iii. *"Utility Credit Spread" defined as "the associated prevailing six-month trailing average Moody's A-rated utility bond yield spread over the 30-year U.S. government bond yield".*

Question(s):

a) Please provide empirical support for the assertion cited at the first reference above, both that "the positive correlation between the utility cost of equity and LCBF has been historically well-noted," and that "the strength of the relationship has weakened over time."

b) Please provide the data and workpapers used to conduct the described regression analysis.

c) Please explain why Concentric believes that U.S. government bond yields, U.S. yield spreads, and awarded ROEs in the U.S. reflect current capital market conditions in Canada that are intended to be reflected in the OEB's ROE formula, as captured by changes in the LCBF and UtilBondSpread estimates included in the OEB formula. In particular, please detail, with supporting analysis, the relationship between allowed ROEs in U.S. jurisdictions and changes in capital market conditions in Canada in general and Ontario utilities' cost of equity or debt in particular.

Response:

a) Concentric has examined the relationship between allowed ROEs, government bond yields and the utility credit spread over time. Using the same database of U.S. gas and electric decisions, government bond yields and credit spreads described on pages 97-98 of our report, Exhibit M2, and varying the end year of the analysis from 2009 to 2024, shows the gradual decline in the relationship between ROE and government bond yields over time, and that the relationship with utility credit spread is also gradually decreasing.

| Analysis Start Year | Analysis End Year | Gov't Bond Yield Coefficient | Credit Spread Coefficient |
|---|---|---|---|
| 1993 | 2024 | 0.3984 | 0.3340 |
| 1993 | 2023 | 0.3992 | 0.3351 |
| 1993 | 2022 | 0.4032 | 0.3301 |
| 1993 | 2021 | 0.3998 | 0.3328 |
| 1993 | 2020 | 0.4077 | 0.3478 |
| 1993 | 2019 | 0.4184 | 0.3467 |
| 1993 | 2018 | 0.4274 | 0.3534 |
| 1993 | 2017 | 0.4198 | 0.3457 |
| 1993 | 2016 | 0.4215 | 0.3490 |
| 1993 | 2015 | 0.4186 | 0.3484 |
| 1993 | 2014 | 0.4133 | 0.3444 |
| 1993 | 2013 | 0.4097 | 0.3380 |
| 1993 | 2012 | 0.3995 | 0.3167 |
| 1993 | 2011 | 0.4498 | 0.3759 |
| 1993 | 2010 | 0.4594 | 0.3690 |
| 1993 | 2009 | 0.4614 | 0.3732 |

b) Please see N-M2-10-AMPCO/IGUA-15(b), Attachment 1 CONFIDENTIAL for the requested data and workpapers.

c) The relationship between U.S. allowed ROEs, government bond yields, and utility credit spreads will likely closely mirror the relationship between Canadian allowed ROEs, government bond yields, and utility credit spreads, as North American regulatory authorities rely, in part, the same interest-rate based models in determining the authorized ROE in their respective jurisdictions. In addition, there would likely not be enough data points to develop a sufficiently robust linear regression using

Canadian data points only.

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Ontario Energy Association (OEA)

Answer to Interrogatory from
Association of Major Power Consumers in Ontario (AMPCO) / Industrial Gas Users Association (IGUA)

INTERROGATORY

Reference:

Concentric "Cost of Capital" dated November 7, 2023 filed with the Newfoundland and Labrador Board of Commissioners of Public Utilities (PUB), on behalf of Newfoundland Power Inc. (NP) (2023 12 12, NP 2025 2026 GRA (Volume 2)).

This evidence reflects Concentric's views understanding and opinions that:

i) NP maintains an A rating from DBRS, and a Baa1 rating from Moody's;
ii) Faces a significant risk due to its small size, as discussed on pages 61-63 of the referenced report.
iii) Faces a significant risk due to weak macroeconomic and demographic conditions in Newfoundland, as discussed on pages 63-66 of the cited report.
iv) Faces a significant risk due to potential issues with future demand and slow potential for growth in customer demand, as discussed on page 70 of the referenced report.

Question(s):

a) Figure 18 (page 29) of the referenced report depicts Concentric's Canadian proxy group of utilities that it relied upon during those proceedings. The group includes five of the six utilities included in its Canadian proxy group for the current proceedings (excluding Fortis Inc.) but also includes Algonquin Power and Utilities Corp. (which it also included in its evidence provided in February 2023 during the 2024 Alberta GCOC proceedings). Please explain why Concentric did not include Algonquin Power in its current Canadian proxy group.

b) Figure 20 (page 31) of the referenced report depicts Concentric's U.S. Electric proxy group of utilities that it relied upon during those proceedings. The group of 10 utilities includes 10 of the 15 included in its U.S. Electric proxy group for the current proceedings but excludes the following five utilities that are included in the Concentric's current proxy group; Ameren Corporation, Exelon Corp., PPL Corporation, Southern Company, and Xcel Energy Inc. Please explain why

Concentric chose to include these additional utilities in its current U.S. Electric proxy group, but did not include them in its Newfoundland evidence.

c) Figure 28 (page 47) of the referenced report depicts Concentric's MRP estimates, as copied below:

**Figure 28: Market Risk Premia – Canada and U.S.**

| | Canadian MRP | U.S. MRP |
|---|---|---|
| Historical | 5.62% | 7.17% |
| Forward-Looking | 4.85% | 10.33% |
| Average | 6.99% | |

In contrast, Figure 17 (page 69) of Concentric's current evidence reports a Canadian forward-looking MRP of 12.09% (well more than double the 4.85% estimate reported above), a U.S. forward-looking MRP of 11.30% (almost 1 percentage point higher than the 10.33% reported above), and an average MRP estimate of 9.06% (2.07 percentage points higher than the average of 6.99% reported above). Would Concentric agree that these are material variations in estimates obtained only 8 months apart and using similar processes and data? If not, please explain why not. If so, what are the implications of such variations to application of Concentric's MRP methodology?

d) During the Newfoundland proceedings, Concentric recommended an allowed ROE for Newfoundland Power of 9.85% and an allowed ER of 45%, similar to its current recommendations for Ontario utilities of 10% and 45% respectively; albeit with a slightly lower ROE recommendation for Newfoundland Power.

   i) Does Concentric agree that Ontario utilities do not face the risks that Concentric identified are facing NP?

   ii) If Concentric does agree, please explain why Concentric believes that Ontario utilities require the same equity thickness and a slightly higher ROE than those which it recommended for NP.

Response:

a) As explained on pages 45 of Concentric's report, Exhibit M2, Algonquin Power and Utilities Corp. ("Algonquin") was not included in Concentric's Canadian proxy group in this proceeding because it did not have positive earnings growth rates from more than one source at the time that Concentric's ROE analysis was completed as of May 31, 2024, and because Algonquin announced a reduction in its dividend in late January

2023. As explained in Footnote 54, having positive EPS growth projections from at least two sources and consistently paying quarterly cash dividends are necessary for inclusion in the DCF model.

b) Concentric used slightly more relaxed screening criteria in Ontario to select companies for its U.S. electric utility proxy group than we used in our recent evidence in Newfoundland and Labrador to obtain a larger proxy group. In particular, as indicated on page 46 of Concentric's report, Exhibit M2, we selected companies for our ROE analysis in this proceeding that derived at least 80% of their regulated operating income from electric utility service during the period from 2021-2023, while in Newfoundland we selected U.S. companies that derived at least 90% of their regulated operating income from electric utility service during the period from 2020-2022. This change allowed for the inclusion of the additional companies in the U.S. electric proxy group.

c) Yes, Concentric agrees that there are material variations in the forward-looking MRP derived in the Ontario proceeding as compared to the same analysis in Newfoundland. However, the level of the forward-looking MRP is not a relevant consideration to our final recommendation because Concentric chose to rely on the more conservative average of the historical MRPs for Canada and the U.S. in our reports in both Ontario and Newfoundland.

d) Ontario's utilities face many of the same risks as Newfoundland Power, but some risks are province or company specific, as detailed in both reports. As to the slightly higher ROE recommendation of 10.0% for Ontario's utilities as compared to 9.85% for Newfoundland Power, that is largely a function of results of the models used to estimate the ROE having increased as of May 2024 compared with the results of those same models when applied for Newfoundland Power in August 2023.

Ontario Energy Association (OEA)

Answer to Interrogatory from
Association of Major Power Consumers in Ontario (AMPCO) / Industrial Gas Users Association (IGUA)

INTERROGATORY

Reference:

On February 1, 2023, Concentric filed a report titled "Generic Cost of Capital for 2024 and Beyond" before the Alberta Utilities Commissions, on behalf of ENMAX Power Corporation (27084-X0315 2023-02-01 Appendix 1 - Evidence of Concentric Energy Advisors).

During the Alberta GCOC proceedings, Concentric recommended an allowed ROE of 9.5% and an allowed ER of 40%, as compared to its current recommendations for Ontario utilities of 10% and 45% respectively. Concentric made these recommendations in Alberta 17 months ago based on its acknowledgement on page 92 of its Alberta report that its recommendations at that time were based on bringing Alberta utilities in alignment with the deemed equity ratios of comparable-risk electric utilities in Ontario and elsewhere across Canada.

Question(s):

a) Figure 17 (page 48) of that report depicts Concentric's Canadian proxy group of utilities it relied upon during those proceedings. The group includes five utilities, including four of the six utilities included in its Canadian proxy group for the current proceedings (excluding AltaGas Limited and Enbridge Inc.) but also includes Algonquin Power and Utilities Corp. (which it also included in its Newfoundland November 2023 evidence). Please explain why Concentric did not include Algonquin Power in its current Canadian proxy group.

b) Please also explain why Concentric now decided to include AltaGas Limited in its Canadian proxy group, despite the position that Concentric took in the Alberta proceedings that AltaGas was not a reasonable Canadian comparator.

c) Please explain why Concentric now decided to include Enbridge Inc. in its Canadian proxy group, contrary to its exclusion by Concentric as a reasonable comparator during those proceedings.

d) Figure 18 (page 49) of Concentric's Alberta report depicts Concentric's U.S. Electric proxy group of utilities that it relied upon during those proceedings. The group of 22 utilities includes 11 of the 15 included in its U.S. Electric proxy group for the current

proceedings but it excludes the following four utilities which are included in its U.S. Electric proxy group for the current proceedings; Exelon Corp., NextEra Energy Corporation, Pinnacle West Capital Corporation, and PPL Corporation. Please explain why Concentric chose to include these additional utilities in its current U.S. Electric proxy group, but did not include them in its Alberta evidence.

e) Figure 18 (page 49) of Concentric's Alberta report also included the following 11 utilities: ALLETTE Inc., Black Hills Corporation, CenterPoint Energy, CMS Energy Corporation, Dominion Energy Inc., DTE Energy Corporation, MGE Energy, NorthWestern Corporation, Sempra Energy, Unitel Corp, and WEC Energy Group. Please explain why Concentric did not include these utilities in its U.S. Electric proxy group for these proceedings.

f) Figure 26 (page 64) of Concentric's Alberta report depicts Concentric's MRP estimates, as copied below:

**Figure 26: Market Risk Premia – Canada and U.S.**

| | Canadian | U.S. |
|---|---|---|
| Historical | 5.74% | 7.46% |
| Forward-Looking | 9.22% | 7.93% |
| Average | 7.59% | |

In contrast, Figure 17 (page 69) of Concentric's current evidence reports a Canadian forward-looking MRP of 12.09% (well more than 30% higher than the 9.22% estimate reported above), a U.S. forward-looking MRP of 11.30% (3.37 percentage points higher than the 7.93% reported above), and an average MRP estimate of 9.06% (1.47 percentage points higher than the average of 7.59% reported above). Would Concentric agree that these are material variations in estimates obtained only 8 months apart and using similar processes and data? If not, please explain why not. If so, what are the implications of such variations to application of Concentric's MRP methodology?

g) Considering the references above, please explain why Concentric now believes that Ontario utilities require higher equity thickness and a higher allowed ROE than those it recommended for Alberta utilities.

h) Does Concentric believe that Ontario utilities are riskier than their Alberta counterparts? If so, please provide evidence to support this assertion.

Response:

a) Please see the response to AMPCO/IGUA-16(a).

b) Please see the response to AMPCO/IGUA-4(d).

c) Enbridge Inc. was included in Concentric's Canadian proxy group, North American Gas proxy group, and North American combined proxy group in this proceeding because the company meets the criteria for inclusion in the Canadian proxy group as described on page 45 of Concentric's report, Exhibit M2. Specifically, Enbridge Inc. has an investment grade credit rating of BBB-. The AUC's North American proxy group did not include Enbridge Inc. due to the fact that the company is primarily an oil and gas pipeline company with a relatively small percentage of revenues, operating income and assets dedicated to gas distribution service. Concentric adopted the AUC's North American proxy group for use in our evidence and analysis in the GCOC proceeding in Alberta in 2023. However, Enbridge Inc. has expanded its presence in gas distribution since the AUC proceeding through the acquisition of gas distribution companies from Dominion Energy Inc. in North Carolina, Ohio, Utah, Idaho and Wyoming. This acquisition added approximately three million gas distribution customers to Enbridge Inc.

d) The companies in the U.S. Electric proxy group in this proceeding were selected by Concentric based on the screening criteria outlined on page 45 of Concentric's report, Exhibit M2. The four electric utilities identified in the question passed each of the stated criteria for inclusion in the proxy group. The AUC used slightly different screening criteria to develop a North American proxy group of companies that it determined were comparable in risk to Alberta's electric and gas utilities in Proceeding 27084. Concentric adopted the AUC's North American proxy group for use in our evidence and analysis in the GCOC proceeding in Alberta in 2023.

e) The eleven U.S. companies identified in the question did not meet one or more of the screening criteria that Concentric used in this proceeding, as outlined on page 45 of Concentric's report, Exhibit M2. For that reason, these companies were not included in the U.S. electric proxy group in the Ontario proceeding. Concentric conducts monthly screens of utilities to determine relevant proxy groups. The proxy group screens set parameters for utility metrics, including but not limited to credit ratings, earnings growth, source of operating income, and transaction history. It is not uncommon for the proxy groups to change based on company specific factors.

f) Yes, Concentric agrees that there are material variations in the forward-looking MRP derived in the Alberta proceeding as compared to the same analysis in the Ontario proceeding, although Concentric observes that more than eight months have passed since our ROE analysis was performed in the Alberta GCOC proceeding. However, the level of the forward-looking MRP is not a relevant consideration because Concentric chose to rely on the more conservative average of the historical MRPs for

Canada and the U.S. in our reports in both Ontario and Alberta.

g) The reference cited is only partial, the complete paragraph from page 92 Concentric's report for ENMAX submitted to the AUC on February 1, 2023 states:

> We have considered not only the financial metrics necessary to maintain a credit rating in the "A" range for each utility sector, and for EPC specifically, but also the utilities' relative risk profiles, and comparable equity returns available for North American utilities. On that basis, we find an increase in the deemed equity ratio for Alberta's transmission and distribution utilities to 40.0 percent is necessary to minimally meet the fair return standard. This ratio is on par with credit rating agency guidance, albeit at the low end of guidance for an investment-grade credit rating by Moody's. It is also aligned with the deemed equity ratios of comparable-risk electric utilities in Ontario and elsewhere across Canada. At our recommended return of 9.5 percent, this equity thickness is appropriate when compared to other Canadian utilities but is still well below the average authorized equity ratio of 51.2 percent for investor-owned U.S. electric utilities in 2021 and 2022.

Concentric emphasized in this paragraph that 40.0 percent was the minimum necessary to meet the FRS, at the low end of guidance for an investment-grade credit rating and still well below the average of U.S. peers. At that point in time, Ontario's electric utilities had an authorized 40% equity ratio. We consider this proceeding an opportunity for the OEB to establish equity ratios that fully meet the FRS and "reflect progress towards parity for equity thickness among North American peers." The complete rationale and support for this recommendation is provided in pages 107-141 of Concentric's report, in response to OEB Issues 11, 12 and 13.

h) Concentric's analysis and recommendations are not based on a narrow risk comparison to Alberta; they are based on a comparison to the North American peers as described on pages 107-141 of Concentric's report in response to OEB Issues 11, 12 and 13.

Ontario Energy Association (OEA)

Answer to Interrogatory from
Association of Major Power Consumers in Ontario (AMPCO) / Industrial Gas Users Association (IGUA)

INTERROGATORY

Reference:

On page 128, Concentric states (bold added for emphasis):

> *Financial risk is assessed in terms of capital structure, credit rating, credit metrics, and authorized return (capital structure and authorized return span both major risk areas, i.e., regulatory, and financial risk). As discussed in the previous section, Ontario's electric transmission and distribution utilities* ***have similar deemed equity ratios as other electric utilities in Canada but substantially lower equity ratios than their U.S. counterparts****. Ontario's gas distributors have somewhat lower deemed equity ratios than other gas distribution companies in Canada and* ***substantially lower equity ratios than their U.S. peers. On that basis*** *and as further discussed below,* ***we find that these Ontario electric and gas utilities have higher financial risk than the North American proxy groups.***
>
> ***Credit metrics provide a snapshot of how a company is financed and to what extent fixed obligations absorb income and cash flows****. Credit analysts focus on the potential for default on debt obligations and rate the financial strength of the companies they cover, with A range entities being more resilient.*

On page 129, Concentric states (bold added for emphasis):

> *Under the Fair Return Standard, the rate of return must be sufficient to* ***enable regulated utilities to maintain financial soundness and to attract capital on reasonable term****s. The utility industry is capital intensive, and companies require sufficient financial strength (i.e., sufficient equity) to access capital under a variety of economic and capital market conditions. An increase in the deemed equity ratio for Ontario's utilities is therefore necessary* ***in order to bring the financial risk of Ontario's utilities more in line with their North American peers.***

Question(s):

a) Given the importance of credit metric analysis noted in the second passage cited above, did Concentric attempt to provide any such analysis? If so, please file it. If not, please explain why not.

b) The second quote above from page 129 implies that Ontario deemed ERs need to be increased "to maintain financial soundness and to attract capital on reasonable terms." Please provide evidence to support the assertions that Ontario utilities are not financially sound, and/or are not able to attract capital on reasonable terms.

Response:

a) No. The question misses the point that Concentric is emphasizing the limitation of credit metrics in determining the rate of return on equity. In the report, p. 129, Concentric continues:

> Importantly, ratings agencies analyze the default risk for *debt holders,* and they consider equity as a cushion for debt, but they do not focus on the residual risk to the *equity shareholders*. Oftentimes, those risks are aligned at a macro level, but there have been notable cases where credit ratings have not been a good measure of shareholder risk. That is the case, for example, where a credit rating is supported at the expense of shareholders (e.g., through dividend restrictions), lowering risk to creditors but increasing risk to shareholders.

b) Concentric's analysis and recommendations are focused on impacts to utility financial integrity and capital attraction on a forward-looking basis. Our analysis demonstrates that the authorized ROEs and deemed equity ratios for Ontario utilities do not currently meet the comparable return principle of the Fair Return Standard. Failure to provide a return on invested capital that is commensurate with returns on investments of similar risk will impair Ontario utilities' ability to attract capital on reasonable returns, which will also inhibit their ability to maintain financial soundness.

Ontario Energy Association (OEA)

Answer to Interrogatory from
Association of Major Power Consumers in Ontario (AMPCO) / Industrial Gas Users Association (IGUA)

INTERROGATORY

Reference:

On page 130, Concentric states (bold added for emphasis):

Growth of capital spending to meet increasing demand (such as that anticipated due to the Energy Transition) will put additional pressures on electric distributors' financial results and the perception of risk by both equity investors and credit rating agencies. A fair return on equity and reasonable deemed capital structure will ensure that distributors are able to attract equity and debt investment on reasonable terms amid growing capital needs to meet demand and improve resilience and reliability.

Question(s):

a) Please explain more particularly why Concentric considers increasing demand to be a negative risk as opposed to a positive business consideration.

b) The quote above alludes to issues facing Ontario distributors in attracting "equity and debt investment on reasonable terms." Please provide any empirical support that Concentric has for this assertion.

Response:

a) The referenced passage from Concentric's report is focused on the risks related to growth in capital spending. Please see the response to N-M2-CCC-2 for a further description of the risks associated with increased capital spending. Concentric's view is that an increase in demand is not a "negative risk," and as noted in Concentric's report, at 130, the Energy Transition increases the key risk factors for electric distribution utilities related to forecasting.

b) Please see the response to N-M2-12-AMPCO/IGUA-18 part (b).

Ontario Energy Association (OEA)

Answer to Interrogatory from
Association of Major Power Consumers in Ontario (AMPCO) / Industrial Gas Users Association (IGUA)

INTERROGATORY

Reference:

On pages 133-135, Concentric provides another of comparable equity ratios in other jurisdictions, with summaries provided in Figure 35 and Figure 36. On page 133, Concentric states (bold added for emphasis):

> *The deemed equity ratios for Ontario's regulated electric distribution and transmission and gas distribution utilities are generally* ***in line with the average equity ratios for their Canadian counterparts but well below the average level for U.S. electric and gas utilities.***

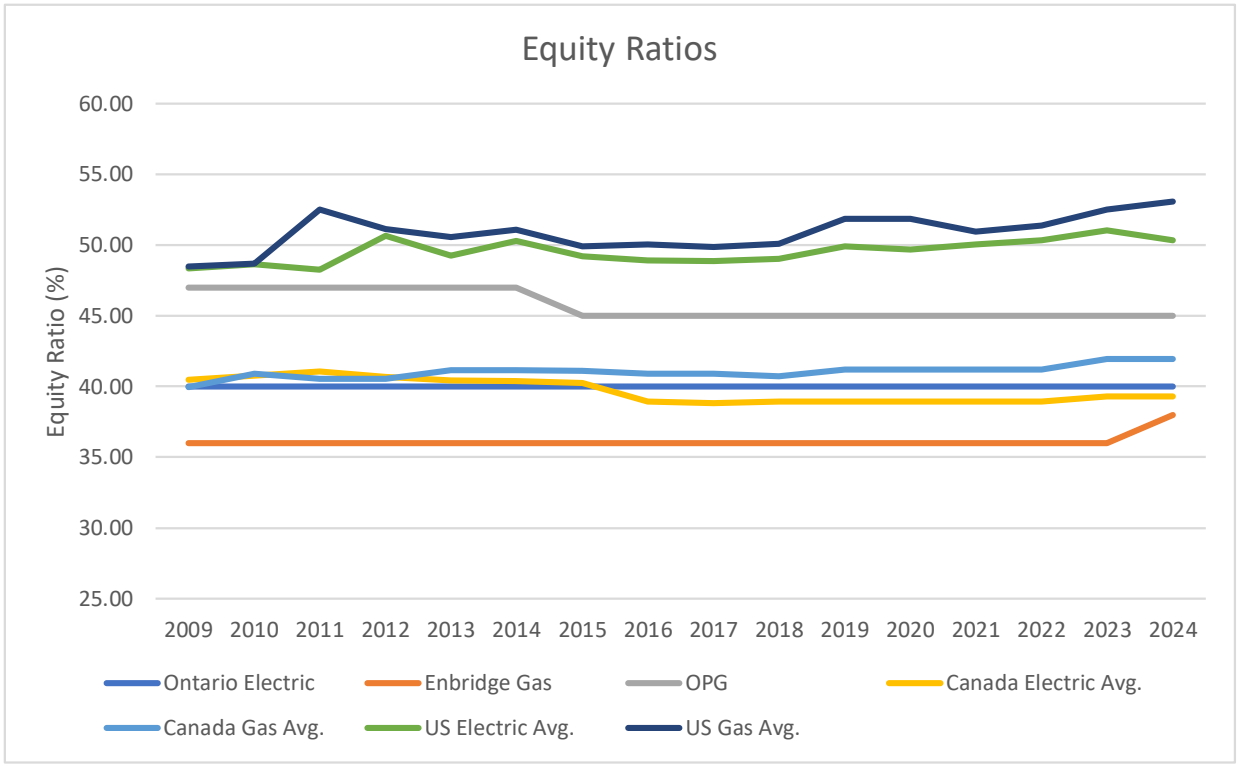
Question(s):

a) The title for Figure 35 suggests that Ontario utilities' ERs are compared to "Canadian and U.S. Averages (2009-2024);" however, there is no line depicting the Canadian averages in the figure. Please reproduce Figure 35 with the inclusion of Canadian average ERs.

b) Please provide all of the data (i.e., including specifically which utilities are included and what their allowed ERs are) and workpapers (in excel format), including all formulae used to construct Figures 35 and 36.

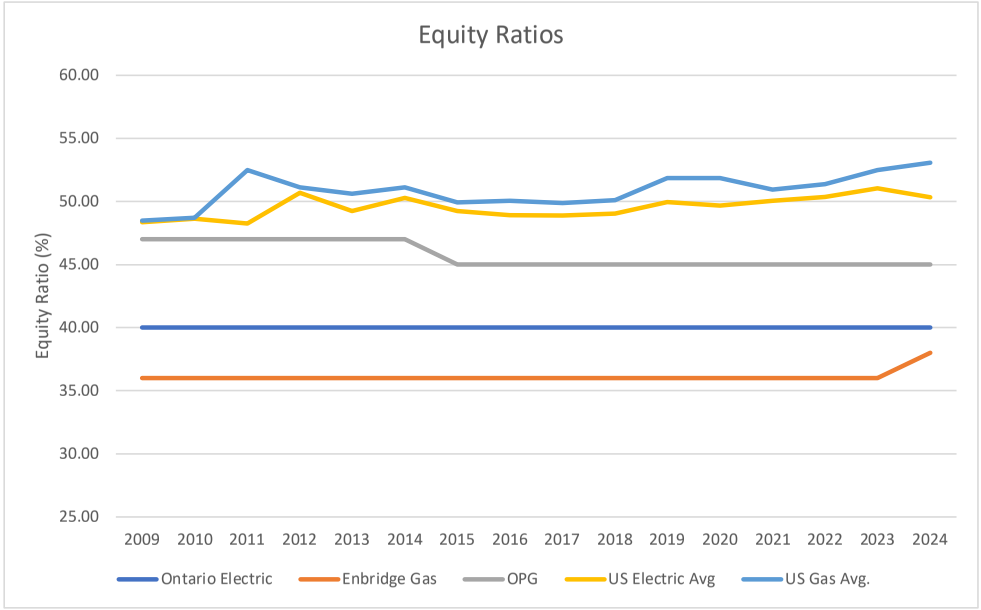
Response:

a) Please see Figure 35 below, reproduced to include the average deemed equity ratios for Canadian electric and gas utilities from 2009-2024.




b) Please see AMPCO/IGUA 20(b), Attachment 1, and AMPCO/IGUA 20(b), Attachments 2 – 5 (Confidential) for the requested workpapers.

| | Ontario Electric | Enbridge Gas | OPG | US Electric Avg | US Gas Avg. |
|---|---|---|---|---|---|
| **2009** | 40.00 | 36.00 | 47.00 | 48.36 | 48.49 |
| **2010** | 40.00 | 36.00 | 47.00 | 48.63 | 48.70 |
| **2011** | 40.00 | 36.00 | 47.00 | 48.26 | 52.49 |
| **2012** | 40.00 | 36.00 | 47.00 | 50.69 | 51.13 |
| **2013** | 40.00 | 36.00 | 47.00 | 49.25 | 50.60 |
| **2014** | 40.00 | 36.00 | 47.00 | 50.28 | 51.11 |
| **2015** | 40.00 | 36.00 | 45.00 | 49.23 | 49.93 |
| **2016** | 40.00 | 36.00 | 45.00 | 48.91 | 50.06 |
| **2017** | 40.00 | 36.00 | 45.00 | 48.90 | 49.88 |
| **2018** | 40.00 | 36.00 | 45.00 | 49.02 | 50.12 |
| **2019** | 40.00 | 36.00 | 45.00 | 49.94 | 51.86 |
| **2020** | 40.00 | 36.00 | 45.00 | 49.67 | 51.87 |
| **2021** | 40.00 | 36.00 | 45.00 | 50.06 | 50.94 |
| **2022** | 40.00 | 36.00 | 45.00 | 50.36 | 51.38 |
| **2023** | 40.00 | 36.00 | 45.00 | 51.04 | 52.49 |
| **2024** | 40.00 | 38.00 | 45.00 | 50.32 | 53.08 |



| Authorized Common Equity Ratio | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
| **Electric Distribution** | | | | | | | | | | | | | | | | |
| ATCO Electric Ltd. | 39.00 | 39.00 | 39.00 | 39.00 | 38.00 | 38.00 | 38.00 | 37.00 | 37.00 | 37.00 | 37.00 | 37.00 | 37.00 | 37.00 | 37.00 | 37.00 |
| ENMAX Power Corporation | 41.00 | 41.00 | 41.00 | 41.00 | 40.00 | 40.00 | 40.00 | 36.00 | 36.00 | 37.00 | 37.00 | 37.00 | 37.00 | 37.00 | 37.00 | 37.00 |
| EPCOR Distribution Inc. | 41.00 | 41.00 | 41.00 | 41.00 | 40.00 | 40.00 | 40.00 | 37.00 | 37.00 | 37.00 | 37.00 | 37.00 | 37.00 | 37.00 | 37.00 | 37.00 |
| FortisAlberta Inc. | 41.00 | 41.00 | 41.00 | 41.00 | 40.00 | 40.00 | 40.00 | 37.00 | 37.00 | 37.00 | 37.00 | 37.00 | 37.00 | 37.00 | 37.00 | 37.00 |
| FortisBC Inc. | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 | 41.00 | 41.00 |
| Maritime Electric Company Limited | 40.00 | 40.00 | 42.70 | 41.70 | 43.50 | 43.10 | 41.90 | 40.90 | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 |
| Newfoundland Power Inc. | 45.00 | 45.00 | 45.00 | 45.00 | 45.00 | 45.00 | 45.00 | 45.00 | 45.00 | 45.00 | 45.00 | 45.00 | 45.00 | 45.00 | 45.00 | 45.00 |
| Nova Scotia Power Inc. | 37.50 | 40.00 | 40.00 | 37.50 | 37.50 | 37.50 | 37.50 | 37.50 | 37.50 | 37.50 | 37.50 | 37.50 | 37.50 | 37.50 | 40.00 | 40.00 |
| Ontario's Electricity Distributors | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 |
| **AVERAGE** | **40.50** | **40.78** | **41.08** | **40.69** | **40.44** | **40.40** | **40.27** | **38.93** | **38.83** | **38.94** | **38.94** | **38.94** | **38.94** | **38.94** | **39.33** | **39.33** |
| **MEDIAN** | **40.00** | **40.00** | **41.00** | **41.00** | **40.00** | **40.00** | **40.00** | **37.50** | **37.50** | **37.50** | **37.50** | **37.50** | **37.50** | **37.50** | **40.00** | **40.00** |
| Newfoundland and Labrador Hydro | 20.00 | 20.00 | 20.00 | 20.00 | 20.00 | 20.00 | 25.20 | 25.20 | 25.20 | 25.20 | 25.20 | 25.20 | 25.20 | 25.20 | | |
| Hydro-Québec Distribution | 35.00 | 35.00 | 35.00 | 35.00 | 35.00 | 35.00 | 35.00 | 35.00 | 35.00 | 35.00 | 35.00 | 35.00 | 35.00 | 35.00 | | |
| Manitoba Hydro | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 | | | | | |
| Saskatchewan Power Corporation | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 | 25.00 | | | | |
| **AVERAGE** | **30.00** | **30.00** | **30.00** | **30.00** | **30.00** | **30.00** | **27.55** | **27.55** | **27.55** | **27.55** | **27.55** | **28.40** | **30.10** | | | |
| **MEDIAN** | **30.00** | **30.00** | **30.00** | **30.00** | **30.00** | **30.00** | **25.10** | **25.10** | **25.10** | **25.10** | **25.10** | **25.20** | **30.10** | | | |
| **Electric Transmission** | | | | | | | | | | | | | | | | |
| AltaLink Management Ltd. | 36.00 | 36.00 | 37.00 | 37.00 | 36.00 | 36.00 | 36.00 | 37.00 | 37.00 | 37.00 | 37.00 | 37.00 | 37.00 | 37.00 | 37.00 | 37.00 |
| ATCO Electric Ltd. | 36.00 | 36.00 | 37.00 | 37.00 | 36.00 | 36.00 | 36.00 | 37.00 | 37.00 | 37.00 | 37.00 | 37.00 | 37.00 | 37.00 | 37.00 | 37.00 |
| ENMAX Power Corporation | 37.00 | 37.00 | 37.00 | 37.00 | 36.00 | 36.00 | 36.00 | 36.00 | 36.00 | 37.00 | 37.00 | 37.00 | 37.00 | 37.00 | 37.00 | 37.00 |
| EPCOR Transmission Inc. | 37.00 | 37.00 | 37.00 | 37.00 | 36.00 | 36.00 | 36.00 | 37.00 | 37.00 | 37.00 | 37.00 | 37.00 | 37.00 | 37.00 | 37.00 | 37.00 |
| Hydro One Networks Inc. | **36.50** | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 |
| **AVERAGE** | **36.50** | **37.20** | **37.60** | **37.60** | **36.80** | **36.80** | **36.80** | **37.40** | **37.40** | **37.60** | **37.60** | **37.60** | **37.60** | **37.60** | **37.60** | **37.60** |
| **MEDIAN** | | **37.00** | **37.00** | **37.00** | **36.00** | **36.00** | **36.00** | **37.00** | **37.00** | **37.00** | **37.00** | **37.00** | **37.00** | **37.00** | **37.00** | **37.00** |
| British Columbia Transmission Corporation | | 40.70 | *n/a* | *n/a* | *n/a* | *n/a* | *n/a* | *n/a* | n/a | n/a | n/a | n/a | n/a | n/a | | |
| Hydro-Québec TransÉnergie | | 30.00 | 30.00 | 30.00 | 30.00 | 30.00 | 30.00 | 30.00 | 30.00 | 30.00 | 30.00 | 30.00 | 30.00 | 30.00 | | |
| **AVERAGE** | | **35.35** | **30.00** | **30.00** | **30.00** | **30.00** | **30.00** | **30.00** | **30.00** | **30.00** | **30.00** | **30.00** | **30.00** | **30.00** | | |
| **MEDIAN** | | **35.35** | **30.00** | **30.00** | **30.00** | **30.00** | **30.00** | **30.00** | **30.00** | **30.00** | **30.00** | **30.00** | **30.00** | **30.00** | | |
| **Natural Gas Distribution** | | | | | | | | | | | | | | | | |
| APEX Utilities | 43.00 | 43.00 | 43.00 | 43.00 | 42.00 | 42.00 | 42.00 | 41.00 | 41.00 | 39.00 | 39.00 | 39.00 | 39.00 | 39.00 | 39.00 | 39.00 |
| ATCO Gas | 39.00 | 39.00 | 39.00 | 39.00 | 38.00 | 38.00 | 38.00 | 37.00 | 37.00 | 37.00 | 37.00 | 37.00 | 37.00 | 37.00 | 37.00 | 37.00 |
| Enbridge Gas Inc. | 36.00 | 36.00 | 36.00 | 36.00 | 36.00 | 36.00 | 36.00 | 36.00 | 36.00 | 36.00 | 36.00 | 36.00 | 36.00 | 36.00 | 38.00 | 38.00 |
| Liberty Utilities Gas New Brunswick | 50.00 | 50.00 | 45.00 | 45.00 | 45.00 | 45.00 | 45.00 | 45.00 | 45.00 | 45.00 | 45.00 | 45.00 | 45.00 | 45.00 | 45.00 | 45.00 |
| FortisBC Energy Inc. | 35.01 | 40.00 | 40.00 | 40.00 | 38.50 | 38.50 | 38.50 | 38.50 | 38.50 | 38.50 | 38.50 | 38.50 | 38.50 | 38.50 | 45.00 | 45.00 |
| FortisBC Energy (Vancouver Island) Inc. | 40.00 | 40.00 | 40.00 | 40.00 | 41.50 | 41.50 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | | |
| FortisBC Energy (Whistler) Inc. | 40.00 | 40.00 | 40.00 | 40.00 | 41.50 | 41.50 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | | |
| Gaz Métro Limited Partnership | 38.50 | 38.50 | 38.50 | 38.50 | 38.50 | 38.50 | 38.50 | 38.50 | 38.50 | 38.50 | 38.50 | 38.50 | 38.50 | 38.50 | 38.50 | 38.50 |
| Gazifère inc. | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 |
| Heritage Gas Limited | 45.00 | 45.00 | 45.00 | 45.00 | 45.00 | 45.00 | 45.00 | 45.00 | 45.00 | 45.00 | 45.00 | 45.00 | 45.00 | 45.00 | 45.00 | 45.00 |
| Pacific Northern Gas Ltd. | 45.00 | 45.00 | 45.00 | 45.00 | 46.50 | 46.50 | 46.50 | 46.50 | 46.50 | 46.50 | 46.50 | 46.50 | 46.50 | 46.50 | 46.50 | 46.50 |
| Pacific Northern Gas (N.E.) Ltd. (Fort St. John/Dawson Creek) | 36.00 | 40.00 | 40.00 | 40.00 | 41.00 | 41.00 | 41.00 | 41.00 | 41.00 | 41.00 | 41.00 | 41.00 | 41.00 | 41.00 | 41.00 | 41.00 |
| Pacific Northern Gas (N.E.) Ltd. (Tumbler Ridge) | 36.00 | 40.00 | 40.00 | 40.00 | 46.50 | 46.50 | 46.50 | 46.50 | 46.50 | 46.50 | 46.50 | 46.50 | 46.50 | 46.50 | 46.50 | 46.50 |
| Union Gas Limited | 36.00 | 36.00 | 36.00 | 36.00 | 36.00 | 36.00 | 36.00 | 36.00 | 36.00 | 36.00 | n/a | n/a | n/a | n/a | | |
| **AVERAGE** | **39.97** | **40.89** | **40.54** | **40.54** | **41.14** | **41.14** | **41.08** | **40.92** | **40.92** | **40.75** | **41.18** | **41.18** | **41.18** | **41.18** | **41.95** | **41.95** |
| **MEDIAN** | **39.50** | **40.00** | **40.00** | **40.00** | **41.25** | **41.25** | **40.50** | **40.50** | **40.50** | **39.50** | **40.00** | **40.00** | **40.00** | **40.00** | **41.00** | **41.00** |
| Centra Gas Manitoba Inc. | 30.00 | 30.00 | 30.00 | 30.00 | 30.00 | 30.00 | 30.00 | 30.00 | 30.00 | 30.00 | 30.00 | 30.00 | 30.00 | 30.00 | | |
| SaskEnergy Inc. | 37.00 | 37.00 | 37.00 | 37.00 | 37.00 | 37.00 | 37.00 | 37.00 | 37.00 | 37.00 | 37.00 | 37.00 | 37.00 | 37.00 | | |
| **AVERAGE** | **33.50** | **33.50** | **33.50** | **33.50** | **33.50** | **33.50** | **33.50** | **33.50** | **33.50** | **33.50** | **33.50** | **33.50** | **33.50** | **33.50** | | |
| **MEDIAN** | **33.50** | **33.50** | **33.50** | **33.50** | **33.50** | **33.50** | **33.50** | **33.50** | **33.50** | **33.50** | **33.50** | **33.50** | **33.50** | **33.50** | | |

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Ontario Energy Association (OEA)

Answer to Interrogatory from
Association of Major Power Consumers in Ontario (AMPCO) / Industrial Gas Users Association (IGUA)

INTERROGATORY

Reference:

On page 13, Concentric, recommends the OEB should track and compare several indicators, as listed below:

- Authorized ROEs and equity ratios in other Canadian jurisdictions (individually) and the U.S. by industry segment (electric, gas) as reported by Regulatory Research Associates ("RRA")
- 10 and 30-year Treasury Bond Yields (Canada and the U.S.)
- A- and BBB-Rated Utility Bond Yields (Canada and the U.S.)
- Betas for the North American Proxy Group as defined in Section V
- Credit ratings from each agency covering Ontario's rate-regulated utilities.

Question(s):

a) With respect to the first indicator noted above - why does Concentric believe the OEB should track such non-market-based information? In particular, please explain;

   i. why awarded ROEs and ERs in other jurisdictions would impact the cost of capital to Ontario operating utilities and/or their business risk profile; and
   ii. how the OEB should use such information.

b) With respect to the second and third indicators noted above – does Concentric believe the OEB should track U.S.-based yields, which do not appear in the OEB formula, if the majority of debt financing obtained by Ontario utilities is Canadian-based? In particular, please explain;

   i. why U.S. Treasury yields and U.S. utility bond yields directly impact the cost of capital to Ontario operating utilities and/or their business risk profile; and
   ii. how the OEB should use such information.

c) With respect to the fourth indicator noted above;

   i. Would Concentric agree that betas are not truly observable – reported betas are in fact beta "estimates," which are known to vary through time?

ii. Please explain why and how beta estimates for 19 U.S. utilities, and six Canadian utilities would impact the cost of capital to Ontario operating utilities and/or their business risk profile.
iii. Please elaborate on how the OEB should use such information.

Response:

a) As explained by Concentric on p. 142 of its report, Exhibit M2, Concentric recommends the Board take several steps to limit the potential impacts of deviations between the formula ROE, deemed capital structures and a fair return. Given the Board's apparent intent to remain on a formula, and the history of multi-year rate plans with several years between rate cases, Concentric believes it is important for the Board to monitor allowed returns in other jurisdictions as a broad indicator of whether its formula ROE and deemed equity ratios remain competitive.

b) U.S. Treasury yields are utilized as inputs to the cost of capital models used by experts in both Canada and the U.S. (in this proceeding, utilized by Concentric, LEI, and Nexus Economics) in recognition of the integration of Canadian and U.S. capital markets. We would expect the Board to monitor U.S. and Canadian bond yields as a macro indicator signaling changes in capital costs that will flow through its formula, as Canadian and U.S. capital markets are closely integrated as discussed in detail in Concentric's report (pp. 52-55).

c) Betas for the North American proxy group are a measure of risk for the utility sector in relation to the broader market. Concentric agrees that betas from typical investment sources, such as Value Line or Bloomberg, are estimates, based on the specific analysis and time periods underlying their calculations, and they do change over time. Changes in these betas would signal to the OEB that utility risk, in the eyes of equity investors, is shifting, and they should expect these changes to flow through the cost of capital models used when rebasing or re-examining the results of its formula. We would expect the OEB to monitor these changes over time and in doing so be better prepared for discussions regarding utility risk in these proceedings and also gain a broader understanding of how these parameters are affecting decisions in other jurisdictions.

Ontario Energy Association (OEA)

Answer to Interrogatory from
Association of Major Power Consumers in Ontario (AMPCO) / Industrial Gas Users Association (IGUA)

INTERROGATORY

Reference:

On page 145, Concentric states (bold added for emphasis):

> *We **do not, however, see the benefit** of requiring utilities to file specific details regarding equity and debt issuances during each year. This would be both **administratively burdensome**, and beyond typical reporting requirements.*

Question(s):

a) Does Concentric agree that receipt of annual reports from utilities regarding debt and equity issues during the year would provide timely market-based information about Ontario utilities' ability to attract capital on favorable terms? If not, please explain why not?

b) Please explain why such reporting would be "administratively" burdensome to utilities.

c) Does Concentric agree with LEI that Ontario utilities do not typically have a large number of debt issues every year (and may have no new issues in some years)?

d) Does Concentric agree with LEI that utility equity issues are even less frequent occurrences than utility des issues, often with no new issues over several years?

e) Would utilities' financial teams have ready access to such information?

f) Would such information typically be included in annual financial reporting by the utility to its shareholder(s) and/or utility reports to potential investors?

Response:

a) These reports would provide evidence of the ability to attract capital, but in and of themselves, would provide limited value in determining the relative favorability of their terms, or the ability to attract all capital required. When Concentric analyzes

similar debt and equity issuances, we collect data on all issues by utilities in a given period to put the specific utility's capital raise and terms in perspective. As explained by Concentric in response to N-M2-14-OEB Staff-23(a), we question whether collecting such data on Ontario utilities alone would provide value to the Board in determining whether the FRS continues to be met in relation to the additional filing requirement.

b) Any new reporting requirement creates an administrative burden on both the filing utility and the Board.

c) Concentric has not conducted comprehensive research, but as an example, EGI issues two to four debt instruments per year, with some years at zero, and other years up to 4 or 6.

d) Based on Concentric's experience, agreed.

e) Concentric assumes that each utility's treasury function would have access to such data.

f) It depends on the utility and its specific reporting. Details of debt and equity issuances are disclosed in Toronto Hydro's annual financial statements. EGI discloses of its debt issuance and retirement details in its annual financial statements as well but recognizes it may provide more detail than most utilities.