PROJECTION ASSUMPTION GUIDELINES

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Institute of FINANCIAL PLANNING

FP Canada Standards Council®

1. EXECUTIVE SUMMARY

LIFE TAKES PLANNING AND IT STARTS WITH REALISTIC PROJECTIONS

An important facet of the financial planner's work is to make a variety of projections: retirement income needs, insurance needs, children's education funding needs, etc.

To make these projections, financial planners must estimate future inflation and borrowing rates, investment returns, how long the need will exist... In short, they must make assumptions.

This is why the Institute of Financial Planning (the Institute), formerly the Institut québécois de planification financière (IQPF), and FP Canada Standards Council™ jointly publish the Projection Assumption Guidelines: to help financial planners make realistic financial projections. Judicious use of these assumptions should protect both the client and the financial planner.

The Projection Assumption Guidelines (referenced as the "Guidelines" or the "PAG") were first released in 2009. When looking at the actual rates from January 2009 to January 2024, the PAG rates are within the same range, which speaks to the reliability and validity of the PAG projections. A chart is included in the Addendum to show the PAG Results from 2009 and how they have tracked over the years.

HOW TO USE THE GUIDELINES

These Guidelines are intended as a guide and are appropriate for making realistic long-term (10+ years) financial projections. Predicting the direction the economy will take and how financial markets will evolve is a difficult exercise, requiring the integration of a large number of variables and highly sophisticated valuation models.

Financial planners should also develop sensitivity analyses to illustrate and assess the impact of changes in assumptions on client's financial position. This is particularly important when client goals may be at risk.

GUIDING PRINCIPLES FOR ESTABLISHING THE GUIDELINES

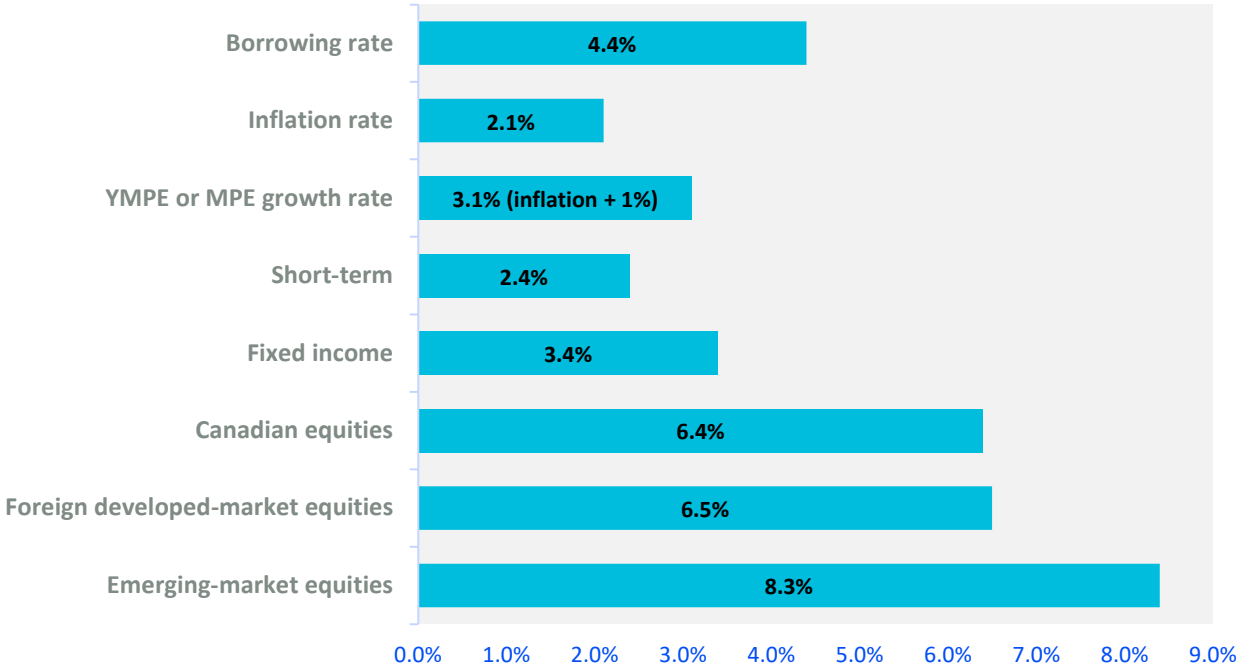
These Guidelines were established using a variety of reliable and publicly available sources, including the actuarial reports for the Quebec Pension Plan and Canada Pension Plan. They do not represent the individual opinion of the members of the Projection Assumption Guidelines Committee, the Institute of Financial Planning or FP Canada Standards Council.

Using numerous sources of data also eliminates the potential bias that may be created by relying on any single source.

The fact that the Quebec Pension Plan and Canada Pension Plan actuarial reports are updated every three years ensures the Guidelines will remain stable.

GUIDELINES FOR 2024

FINANCIAL ASSUMPTIONS (before any administrative and investment management fees)



Note that the administrative and investment management fees paid by clients both for products and advice must be subtracted to obtain the net return.

PROBABILITY OF SURVIVAL TABLE

	10 %	10 %	10 %	15 %	15 %	15 %	20 %	20 %	20 %	25 %	25 %	25 %	30 %	30 %	30 %	35 %	35 %	35 %	40 %	40 %	40 %	45 %	45 %	45 %	50 %	50 %	50 %
Current Age in 2024	M	F	M/F	M	F	M/F	M	F	M/F	M	F	M/F	M	F	M/F	M	F	M/F	M	F	M/F	M	F	M/F	M	F	M/F
20	99	101	102	97	100	101	96	98	100	95	97	99	94	97	98	93	96	98	92	95	97	91	94	96	90	93	96
25	99	101	102	97	99	101	96	98	100	95	97	99	94	96	98	93	95	97	92	95	97	91	94	96	90	93	95
30	99	101	102	97	99	101	96	98	100	95	97	99	94	96	98	93	95	97	92	94	97	91	93	96	90	92	95
35	98	101	102	97	99	100	96	98	99	95	97	99	94	96	98	93	95	97	92	94	96	91	93	96	90	92	95
40	98	100	102	97	99	100	96	98	99	95	97	98	94	96	98	93	95	97	92	94	96	91	93	96	90	92	95
45	98	100	101	97	99	100	95	98	99	94	97	98	93	96	98	92	95	97	91	94	96	90	93	95	89	92	95
50	98	100	101	96	99	100	95	98	99	94	96	98	93	95	97	92	95	97	91	94	96	90	93	95	89	92	95
55	98	100	101	96	99	100	95	97	99	94	96	98	93	95	97	92	94	96	91	93	96	90	92	95	89	91	94
60	98	100	101	96	98	100	95	97	99	94	96	98	93	95	97	92	94	96	91	93	96	90	92	95	89	91	94
65	97	100	101	96	98	100	95	97	99	94	96	98	93	95	97	92	94	96	91	93	96	90	92	95	89	91	94
70	97	100	101	96	98	99	95	97	99	94	96	98	93	95	97	92	94	96	91	93	96	90	92	95	89	91	94
75	97	100	101	96	98	99	95	97	99	94	96	98	93	95	97	92	94	96	91	93	96	90	93	95	90	92	94
80	98	100	101	96	98	100	95	97	99	94	96	98	93	95	97	93	95	96	92	94	96	91	93	95	90	92	95
85	98	100	101	97	99	100	96	98	99	95	97	98	94	96	98	94	95	97	93	95	96	92	94	96	92	93	95
90	99	101	102	98	100	101	97	99	100	97	98	99	96	97	99	95	97	98	95	96	98	94	96	97	94	95	97
95	101	102	103	100	101	102	100	101	102	99	100	101	99	100	101	98	99	100	98	99	100	98	98	100	97	98	99
100	105	105	106	104	104	105	103	104	105	103	103	104	103	103	104	102	103	104	102	102	103	102	102	103	102	102	103

The table used to calculate the probability of survival is the CPM2014 Mortality Table, based on data from both public and private sector pension plans for 1999-2008, taken forward to 2024 using the CPM Improvement Scale B. For years beyond 2014, the same improvement scale was used to establish generational mortality rates. This mortality table and the improvement scale were published by the Canadian Institute of Actuaries in February 2014.

Final Report: Canadian Pensioners' Mortality

2. BACKGROUND

An important facet of the financial planner's work is to make a variety of projections: retirement income needs, insurance needs, children's education funding needs, etc. In making projections, financial planners are bound by method, rather than results. The purpose of this document is to map out the economic and investment assumptions to use in the preparation of these projections.

The Guidelines are intended as a guide and are appropriate for making realistic long-term (10+ years) financial projections that are free from the potential biases of financial planners. Predicting the direction the economy will take and how financial markets will evolve is a difficult exercise, requiring the integration of a large number of variables and highly sophisticated valuation models. To protect themselves and their clients, financial planners are encouraged to rely on these Guidelines.

Financial planners should also develop sensitivity analyses to illustrate and assess the impact of changes in assumptions on clients' financial position. A sensitivity analysis might take the form of a Monte Carlo analysis, scenario testing using an adjusted rate of return or determining a client's minimum required rate of return. This is particularly important when client goals may be at risk.

a) Updating and useful life of the Guidelines

The Guidelines are updated annually. Although some of the assumptions set out in these Guidelines may change from time to time, this does not mean that projections based on previously published assumptions are no longer valid. The projections are considered valid at the time of preparation.

b) Use of the Guidelines

Given the Guideline's objectivity and basis in reliable sources, their use is strongly encouraged to promote trust and confidence in the financial planner's projections.

That said, a financial planner is in the best position to understand their clients' unique circumstances. Because every client situation is different, assumptions that vary from the Guidelines may be used, but should be documented.

Assumptions may also differ from the Guidelines based on local market conditions. As an example, projections of education costs, which tend to be impacted by local market differences, may justify using an inflation rate that differs from the Guidelines. Projections of salary increases may also justify an inflation rate that differs from the Guidelines, where clients give good reason for the change.

c) Compliance with the Guidelines

In all cases, assumptions used should be documented, with sound rationale, and clearly communicated to clients together with a written explanation. The use of the Guidelines can be disclosed using a statement such as the following:

- Projection prepared using the Institute of Financial Planning and FP Canada Standards Council™ *Projection Assumption Guidelines*.
- Analysis prepared using the Institute of Financial Planning and FP Canada Standards Council™ *Projection Assumption Guidelines*.

- Study prepared using the Institute of Financial Planning and FP Canada Standards Council™ *Projection Assumption Guidelines*.
- Calculation made using the Institute of Financial Planning and FP Canada Standards Council™ *Projection Assumption Guidelines*.

d) Deviation margins

Where appropriate, financial planners may deviate within plus or minus 0.5% from the rate of return assumptions and continue to be in compliance with the Guidelines.

In making a judgement call around whether to deviate 0.5% up or down, financial planners may consider the following factors:

- The impact of a variation in return on the expected lifestyle of clients. As an example, it would not be prudent to increase return assumptions to "force" a projection that secures a client's goal.
- The propensity of clients to buy high and sell low, thereby reducing their long-term rates of return. Where the propensity is high, one may consider reducing the expected rate of return on their portfolio.[1]

  The degree to which clients rely on professional financial advice in managing their investment portfolio, including regular rebalancing of their portfolio, which may increase their long-term rates of return.[2]

Any deviation in excess of 0.5% in either direction of the guidelines should be reasonable and supportable and be documented with a written explanation.

It is not unusual for significant fluctuations to occur in the market over a short period of time. For example, a financial planner may be preparing a financial plan at a point in time following a marked increase in the stock market, or planning may occur following a major decline in the stock market. Movements and fluctuations can also be seen in the release of Consumer Price Index results, such as a negative rate in May 2020 on a year over year basis and then a rate of 6.3% in December 2022 year over year. These historic fluctuations are shown in the CPI Results chart provided in the Addendum. In looking at a two-year rolling average, 74% of the time the inflation rate was at 3% or lower. As of December 2023, CPI has averaged 3.48% over the last five years and 2.58% over the last 10 years.

Based on the current economic conditions, financial planners may be tempted to drastically change just one assumption, such as increasing inflation to 4% for the entire retirement planning projection. By revising only the rate for inflation, the financial planner ignores the correlation that exists between inflation and interest rates and the cited asset classes. If inflation remains high, interest rates would typically go up, as would the return on equities over the long term. We recommend that financial planners use the projected economic assumptions as a whole and avoid attempting to personalize a forecast for the client by making a significant adjustment to a single variable. Presenting alternate scenarios and projections to the client may be a better approach.

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[1] DALBAR. (2021). Reprinted from 2017. DALBAR QAIB: Investors are Still Their Own Worst Enemies [Press release]. Retrieved from https://www.ifa.com/articles/dalbar_2016_qaib_investors_still_their_worst_enemy/https://globenewswire.com/news-.

[2] Masters, S. J. (2003). Rebalancing. *The Journal of Portfolio Management*,*29*(3), 52-57.

In summary, for projections with a time frame of 10-plus years, it is recommended that the inflation rate calculated and provided in the Projection Assumption Guidelines be used. Adjusting or increasing the inflation rate to reflect the current economic data is not advised primarily for two reasons. First, the current experience of rapidly rising inflation is unlikely to continue over a longer-term time frame of 10-plus years. This rationale is supported by the CPI Rates chart provided in the Addendum. Second, increasing just the one data point, such as inflation, ignores the corresponding movements that would likely occur with interest rates, fixed income and equity-based assets.

e) Effective date of the Guidelines

The Guidelines for 2024 are effective as of April 30, 2024.

3. CONSIDERATIONS FOR ESTABLISHING THE GUIDELINES

a) Use of external sources

The Guidelines were established using a variety of reliable and publicly available data sources. They do not represent the individual opinions of the members of the Projection Assumption Guideline Committee, the Institute of Financial Planning or FP Canada Standards Council.

Using numerous sources of data also eliminates the potential bias that may be created by relying on any single source.

The **Addendum to the *2024 Projection Assumption Guidelines*** provides links to sources, data and calculations used in the development of the Guidelines. The Addendum is provided for transparency and replicability of the Guidelines by financial planners and firms.

Note that FP Canada Standards Council and the Institute of Financial Planning distributed a long-term expectations survey to source data used in the Guidelines. In the fall of 2023, the survey was sent to industry firms. The source data points from the survey are detailed in the Addendum. FP Canada and the Institute of Financial Planning thank all participants, including Aon, BMO Gam, Canada Life Assurance Company, CIBC, Guardian Capital, IG Wealth Management, Louisbourg, Normandin Beaudry, PWL Capital Inc., as well as all other contributors.

The Guidelines were prepared using geometric mean (GM) assumptions. For the purposes of Monte Carlo analysis, a conversion needs to be done from geometric to arithmetic mean (AM) assumptions. With this conversion of the GM assumptions from the Guidelines, the financial planner will need to identify an expected standard deviation. This conversion is applicable when the volatility is higher, as often seen with equity holdings. Since the Guidelines have adjusted the equity assumptions by 0.5 %, this adjustment needs to be added back to calculate the AM. Once the financial planner has identified a realistic standard deviation (σ), the following formula could be applied to arrive at the AM estimate:

For equities: AM (est) = GM from the Guidelines + 0.5 % + $\sigma^2/2$

For other assets: AM (est) = GM from the Guidelines + $\sigma^2/2$

b) Aim of stability

The fact that the Quebec Pension Plan (QPP) and Canada Pension Plan (CPP) actuarial reports are updated every three years ensures the Guidelines will remain stable.

As well, to ensure stability from year to year and more closely reflect the underlying data, the Guidelines will continue to be rounded to the nearest 0.1%,[3] as has been done since 2015 when the methodology was changed from rounding to the nearest 0.25%.

c) Incorporation of market based expected returns

While stability is an important consideration in setting the Guidelines, significant changes in expected returns may occur from year to year. To account for this, as of 2024, the market based expected returns reflected in asset prices are included in the Guidelines. Asset class yields have historically varied in their ability to predict future asset class returns. Fixed income yields have historically been strongly predictive of 10+ year fixed income returns, Shiller earnings yields, which is the ratio of 10-year smoothed real earnings to market prices, have been moderately predictive of 10+ year future equity returns, and cash yields have had low predictive power over future cash returns. This information is reflected in the Guidelines with the inclusion of a market based expected return figure in the calculation of fixed income and equity expected returns. Due to the stronger observed predictive power in fixed income, a 40% weight has been assigned to the market based expected return for this asset class. A market based expected return has not been included in the calculation for cash.

d) Limitations

The Guidelines cover the main asset classes—short-term assets, fixed income, Canadian domestic equities, foreign developed-market equities (including U.S. equities and Europe, Australia and Far East equities) and foreign emerging-market equities.

Guidelines are not provided for other asset classes, including global bonds, U.S. equities, small-capitalization equities, and value and growth equities, because these asset classes are not addressed in the CPP and QPP actuarial valuation reports. The guideline for foreign developed-market equities may be used as a proxy for U.S. equities.

Similarly, guidelines are not provided for changes in the real estate market, for the following reasons:

- Separate guidelines would be required for residential, commercial and industrial buildings.
- A regional index would be necessary (as the real estate market behaves differently in, for example, Halifax, Montréal, Toronto and Vancouver).

When making assumptions around real estate growth, it is important to consider an appropriate starting valuation for the property and to use an inflation-based assumption that is suitable based on the local market context.

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[3] By rounding to the nearest .25%, a 3.10% result would generate a guideline of 3.00%, while a result of 3.15% would generate a result of 3.25%. By rounding to the nearest .1%, a 3.10% result would maintain the guideline of 3.10%, while a result of 3.15% would generate a guideline of 3.20%.

Guidelines are not provided for exchange rates, since the net long-term effect of changes in exchange rates is generally nil. Financial planners should develop sensitivity analysis to illustrate and assess the potential ramifications of changes in exchange rates. Clients who may require income in a foreign currency may wish to maintain assets in that foreign currency to avoid foreign exchange-rate risk.

It is also important to note that the Guidelines do not contemplate personal risk profiles. Since an individual's risk profile or change in risk profile may have consequences at least as significant as, or more significant than, the rate of return guidelines used in developing financial projections, sound personal risk assessments are critical.

e) Standard deviation

The Addendum provides historical data on standard deviation for information purposes. No guideline is provided on standard deviation for each asset class. For future standard deviation expectations, the CPP actuarial report provides tables for different portfolios with expected rates of return and standard deviation. Financial planners who run Monte Carlo analyses may add back the 0.50%[4] on the equity portion of the portfolio and make the conversion from geometric to arithmetic means using the expected standard deviation.

4. ASSUMPTIONS SUBJECT TO THE GUIDELINES

Two types of assumptions are subject to guidelines:

- financial assumptions (inflation, changes in the year's maximum pensionable earnings [YMPE or MPE], long-term returns on short-term investments, fixed income, Canadian domestic equities, foreign developed-market equities and foreign emerging-market equities and borrowing rates), and
- demographic assumptions (life expectancy).

a) Inflation

The inflation assumption is central to the preparation of medium- and long-term projections. The inflation assumption is made by combining the inflation assumptions from the following sources (each weighted at 25%):

- the average of the inflation assumptions for 30 years (2024 to 2053) used in the most recent QPP actuarial report[5]
- the average of the inflation assumptions for 30 years (2026 to 2055) used in the most recent CPP actuarial report[6]
- the results of the 2023 FP Canada/Institute of Financial Planning survey. The reduced average was used where the highest and lowest value were removed.
- the current Bank of Canada target inflation rate

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4 Dupras, M. (2004, November). Retraite et Monte Carlo. *La Cible, 12*(4), 6-8.=

5 December 31, 2021 QPP actuarial report, published December 2022.

6 December 31, 2021 CPP actuarial report, published November 2022.

The result of this calculation is rounded to the nearest 0.10%.

A discussion was held about the use of separate inflation rates for older individuals or high earners. Two studies by Radu Chiru of Statistics Canada[7] demonstrate that there are small differences in inflation for these two groups of Canadians as compared to the Canadian population as a whole, but these differences are not deemed to be material.

Wage increases

The inflation assumption can be used to project wage increases by adding 1.00% to reflect productivity gains, merit and advancement.[8]

It may be appropriate to deviate from the Guidelines where a client reasonably expects higher or lower wage increases for the foreseeable future. As an example, where a client is reaching the end of his or her career or is in a position with no real chance of advancement, the financial planner may consider a wage increase equal to or less than inflation.

i. Year's maximum pensionable earnings (YMPE or MPE)

The year's maximum pensionable earnings (YMPE) is based on average increases in salaries. Therefore, the inflation assumption plus 1.00% should be used.

b) Nominal returns (before fees)

Rate of return assumptions have been established for short-term investments (91-day T-bills), fixedincome, Canadian domestic equities, foreign developed-market equities and foreign emerging-market equities. These assumptions represent gross nominal returns (including inflation).

The guidelines for short-term investments were set by combining assumptions from the following sources (each weighted at 33%):

- the average of the assumptions for 30 years (2023 to 2052) used in the most recent QPP actuarial report
- the average of the assumptions for 30 years (2035 to 2064) used in the most recent CPP actuarial report
- the results of the 2023 FP Canada/Institute of Financial Planning survey. The reduced average was used where the highest and lowest value were removed.

Note that for both the short-term and fixed income assumptions, the 50-year historical average rate was removed in 2020 as a data source in determining these assumptions. The decision was made to review the validity of this portion of the assumption calculation given its position as a significant outlier for both the short-term and fixed income calculation inputs. It is viewed that these historical variables may so significantly depart from future expectations that they should not be used in the current environment.

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[7] Is Inflation Higher for Seniors? (2005) Catalogue no. 11-621-MWE2005027 and Does Inflation Vary with Income? (2005) Catalogue no. 11-621- MWE2005030.

[8] In the most recent CPP and QPP actuarial reports, a final margin of 0.9% between wage increases and inflation was applied in the CPP report and 0.8% was used in the QPP report

The guidelines for fixed income investments were set by combining assumptions from the following sources (using a 20% weight for each of the QPP, CPP and FP Canada/the Institute of Financial Planning Survey sources and a 40% weight for the YTM of the Canada Total Market Bond Index):

- the average of the assumptions for 30 years (2023 to 2052) used in the most recent QPP actuarial report
- the average of the assumptions for 30 years (2035 to 2064) used in the most recent CPP actuarial report
- the results of the 2022 FP Canada/ Institute of Financial Planning survey. The reduced average was used where the highest and lowest value were removed.
- the yield to maturity (YTM) of the Canada Total Market Bond Index

The guidelines for equity assets were set by combining assumptions from the following sources (each weighted at 20%):

- the average of the assumptions for 30 years (2023 to 2052) used in the most recent QPP actuarial report
- the average of the assumptions for 30 years (2026 to 2055) used in the most recent CPP actuarial report
- the results of the 2023 FP Canada/Institute of Financial Planning survey. The reduced average was used where the highest and lowest value were removed.
- the historic returns over the 50 years ending the previous December 31st (adjusted for inflation)
- the Shiller earnings yield

The historical component used is based on the S&P/TSX (Canadian equities) Index, the S&P 500 Composite Index (U.S. equities), the MSCI EAFE (Europe, Australia, Far East) Index and the MSCI Emerging Markets Index.

For the sake of consistency, the afore-mentioned indices, expressed in real returns (returns reduced by the total CPI inflation index as published by Statistics Canada), are increased by the future inflation assumption (before rounding).

The following considerations are also of note:

i. Short-term

The guideline of 2.4% for short-term investments represents a long-term assumption for short-term returns. As an example, consider the long-term return for a mutual fund holding 5.0% of its assets in short-term investments. Over the long term, these assets would be expected to generate an annual return equal to 2.4%.

For shorter-term financial projections (less than 10 years), financial planners may use actual rates of return on fixed-term investments held to maturity.

ii. Fixed income

The fixed income assumptions used in the most recent QPP and CPP actuarial reports have been adjusted to account for the opportunity of the QPP and CPP to buy and hold fixed income for significantly longer than the typical holding period of individuals. A margin of 0.75% is therefore deducted from the QPP and CPP actuarial assumptions to convert the long-term fixed income assumptions into a more relevant fixed income assumption for individual financial planning. The

projected fixed income rate of return can also be applied to preferred share holdings. Please note that this is not an opinion regarding the volatility of preferred shares versus fixed income and that preferred shares can have different characteristics that can impact their pricing.

iii. Canadian domestic equities

For investments in Canadian domestic equities, a safety margin of 0.50%.[9] is deducted from the result obtained by weighting the different data sources to compensate for the variability of the long-term returns. The adjustment aligns with the outcome of a Monte Carlo analysis that approximates the probability of future Canadian equity returns by running 300,000 trial runs, called simulations.

iv. Foreign developed-market equities and Foreign emerging-market equities

Foreign equities consist of U.S., Europe, Australia, Far East and foreign emerging-market equities. As done with the projected return for Canadian equities, a safety margin of 0.50% is deducted from the result obtained by weighting the different data sources to compensate for the variability of the long-term returns.

The projected rate for foreign developed-market equities can be used as a proxy for U.S. equities. No separate guideline is provided for U.S. equities, for the following reasons:

- CPP and QPP do not distinguish U.S. equities from foreign developed-market equities in their reports, however the reports indicate that U.S. equities are a part of their investment portfolio.
- The result of the 2023 FP Canada/Institute of Financial Planning survey is used. The reduced average was used where the highest and lowest value were removed. The value used is the average between MSCI EAFE Index and S&P 500 US Index.

Note, however, the historical returns used to develop the guideline for foreign developed-market equities include the MSCI EAFE Index Foreign Equities (Developed) and the S&P 500 Composite Index for U.S. equities on a 50/50 basis.

v. Type of equity return

In a non-registered investment account, projections must take account of income taxes. For significant sums, it might be appropriate to divide the return into two categories: dividends and capital gains. Historically, 25% to 50% of overall equity returns have been made up of dividends. It therefore seems reasonable to assume that 33% of the overall equity return will be made up of dividends and that the rest will be capital gains.[10]

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9 Dupras, M. (2004, November). Retraite et Monte Carlo. *La Cible*, *12*(4), 6-8.

10 Projection Assumption Guidelines Committee analysis completed using the S&P/TSX total return index.

vi. Equity risk premiums

Since risk-taking must be rewarded, equity returns are developed by adding an equity risk premium to the long-term bond returns. Historical equity risk premiums have decreased over time due to several non-repeatable factors (mainly diversification and globalization) and are similar for Canadian and foreign-developed markets at 3.0% and 3.1% respectively. The equity risk premium for foreign emerging-market equities is expected to be higher than for developed-market equities, reflecting the additional risk inherent with investments in countries with emerging financial markets. It is important to note that the world economy has become increasingly financially integrated. Countries, financial institutions and businesses have become increasingly large, with a more sophisticated and interconnected range of activities. When one country experiences a financial crisis, it quickly propagates among others.

The removal of the 50-year historical average rate of the fixed income index, which was adopted in the 2020 Projection Assumption Guidelines, resulted in a projected return drop of 1% in this asset class. The primary reason for this adjustment and resulting lower rate was to avoid using too high of an expectation for clients who are fundamentally conservative investors. In doing so, with no similar adjustment to equities, the risk premium (Canadian equities minus fixed income) has jumped from an average of 2.4% (2009-2019) to 3.3% (2021-2023).

vii. Blend of forecasting and backcasting

The Guidelines consider both expected future economic behaviour based on assumptions provided in the QPP and CPP actuarial analyses, the 2023 FP Canada/Institute of Financial Planning survey, and the current earnings yield, as well as historical market performance. Projecting the future by relying solely on historical returns would suggest an expectation that the future will mirror the past, which is not always a reasonable expectation. Stock and bond returns can be decomposed into expected and unexpected components. The expected component reflects the discount rate, or the price of risk for holding risky assets, and the unexpected component materializes as valuations change over time. Looking only at historical returns, which reflect both expected and unexpected returns, may lead to biased estimates of expected returns. For example, a recent run-up in stock prices caused by increasing valuations will push historical returns up and expected returns down. This makes the historical return in the example an upward biased estimate of the expected return. A similar effect will be observed in the opposite direction after a falling market. For these reasons, a combination of forward-looking and backward-looking expected return estimates is likely to produce a more useful result.[11],[12],[13]

c) Considerations concerning fees[14]

The investment management fees paid by clients must be subtracted to obtain the net return. Depending on the type of asset management clients use (mutual funds, pooled funds, advisor-managed account, etc.), these fees typically range from 0.5% to 2.5%. When a client's portfolio is made up of a wide variety of mutual funds with different management expense ratios, an average fee ratio per asset

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[11] Dimson, E., Marsh, P., & Staunton, M. (2006). The worldwide equity premium: A smaller puzzle. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.891620

[12] Fama, E. F., & French, K. R. (2002). The equity premium. *The Journal of Finance*, *57*(2), 637–659. https://doi.org/10.1111/1540-6261.00437

[13] Ilmanen, A. (2022). *Investing amid low expected returns: Making the most when markets offer the least*. John Wiley & Sons.

[14] Lussier, J. (2013). *Successful Investing Is a Process: Structuring Efficient Portfolios for Outperformance*. New Jersey: John Wiley & Sons.

class may be used. All fees, whether paid directly or indirectly, that impact potential returns must be considered in the calculation.[15] Transparency around fees is important, in terms of the amount of fees charged (direct or indirect), the impact of fees on investment performance and the value the financial planner brings to the planning engagement.

d) Borrowing rate

A great number of factors influence a client's borrowing rate, such as the type of loan and the client's credit history. However, consider the following relationships:

- There is a very strong correlation between the target overnight rate and the 91-day T-bill rate.
- The bank rate is set by adding 0.25% to the target overnight rate.
- The prime rate is set by adding 1.75% to the bank rate.

For an individual with an average credit rating, the borrowing rate assumption is equal to the return assumption for 91-day T-bills (short-term rate) plus 2.00%. While borrowing rates in Canada experienced steady increases from March 2022 to July 2023, the Guidelines are forward-looking and reflect expectations over the longer term. Primarily, the borrowing rate assumption was provided to help illustrate the potential impact of a borrowing to invest strategy over the long term. Borrowing rates can change and this change needs to be appropriately accounted for in projections. It is prudent professional practice to consider the potential for borrowing rates to increase for purposes of assessing the relative benefits and risks associated with leveraging. It is also sensible to use a long-term borrowing rate assumption when projecting the impact of debt on a client's financial position over the longer term. Actual borrowing costs may be more logically used for short-term projections. Borrowing to invest in fixed income could be at a loss if a lower interest rate is earned on the capital and a higher interest rate is paid on the loan, resulting in a negative return.

e) Life expectancy

There are several different mortality tables, each based on a specific target group. The following factors are examples of target group characteristics:

- gender
- smoker or non-smoker status
- place of residence (e.g., province, country)
- evidence of good health (for life insurance pricing)
- wealth[16]
- being retired

The 2014 Canadian Pensioners' Mortality Table[17], projected to 2024, may be used as the basis for assuming an individual's life expectancy. While the table reflects the average probability of survival for a subset of the Canadian population (i.e., members of Canadian pension plans), it can be appropriately

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[15] Examples of these fees may include, but are not limited to, management expense ratio, advisory fees, custodian fees, trailing fees, commissions and transaction costs

[16] https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1310001901

[17] 2014 Canadian Institute of Actuaries Canadian Pensioners' Mortality Report.

used to represent the life expectancy of the full Canadian population, given that its bias toward longer life expectancies provides a more conservative approach to developing projections.

Projection Period

It is recommended to assume a projection period for clients where the probability of outliving their capital is no more than 25%. Forecasting a longer projection period offers protection from future improvements in mortality and accounts for the greatest financial risk to an individual: longevity risk. It is also recommended that the greatest mortality age be used that corresponds to the client's circumstances, unless there is substantial information suggesting an adjustment should be made. This recommendation aligns with the expected growth in the number of centenarians in Canada.[18] Financial planners are encouraged to develop sensitivity analyses related to mortality (e.g., +/- 5 years), given the dramatic effects that may result when the projection period is changed by a relatively small number of years.

Probability of Survival

	10%	10%	10%	15%	15%	15%	20%	20%	20%	25%	25%	25%	30%	30%	30%	35%	35%	35%	40%	40%	40%	45%	45%	45%	50%	50%	50%
Current Age in 2024	**M**	**F**	**M/F**	M	F	M/F	M	F	M/F	M	F	M/F	M	F	M/F	M	F	M/F	M	F	M/F	M	F	M/F	M	F	M/F
20	99	101	102	97	100	101	96	98	100	95	97	99	94	97	98	93	96	98	92	95	97	91	94	96	90	93	96
25	99	101	102	97	99	101	96	98	100	95	97	99	94	96	98	93	95	97	92	95	97	91	94	96	90	93	95
30	99	101	102	97	99	101	96	98	100	95	97	99	94	96	98	93	95	97	92	94	97	91	93	96	90	92	95
35	98	101	102	97	99	100	96	98	99	95	97	99	94	96	98	93	95	97	92	94	96	91	93	96	90	92	95
40	98	100	102	97	99	100	96	98	99	95	97	98	94	96	98	93	95	97	92	94	96	91	93	96	90	92	95
45	98	100	101	97	99	100	95	98	99	94	97	98	93	96	98	92	95	97	91	94	96	90	93	95	89	92	95
50	98	100	101	96	99	100	95	98	99	94	96	98	93	95	97	92	95	97	91	94	96	90	93	95	89	92	95
55	98	100	101	96	99	100	95	97	99	94	96	98	93	95	97	92	94	96	91	93	96	90	92	95	89	91	94
60	98	100	101	96	98	100	95	97	99	94	96	98	93	95	97	92	94	96	91	93	96	90	92	95	89	91	94
65	97	100	101	96	98	100	95	97	99	94	96	98	93	95	97	92	94	96	91	93	96	90	92	95	89	91	94
70	97	100	101	96	98	99	95	97	99	94	96	98	93	95	97	92	94	96	91	93	96	90	92	95	89	91	94
75	97	100	101	96	98	99	95	97	99	94	96	98	93	95	97	92	94	96	91	93	96	90	93	95	90	92	94
80	98	100	101	96	98	100	95	97	99	94	96	98	93	95	97	93	95	96	92	94	96	91	93	95	90	92	95
85	98	100	101	97	99	100	96	98	99	95	97	98	94	96	98	94	95	97	93	95	96	92	94	96	92	93	95
90	99	101	102	98	100	101	97	99	100	97	98	99	96	97	99	95	97	98	95	96	98	94	96	97	94	95	97
95	101	102	103	100	101	102	100	101	102	99	100	101	99	100	101	98	99	100	98	99	100	98	98	100	97	98	99
100	105	105	106	104	104	105	103	104	105	103	103	104	103	103	104	102	103	104	102	102	103	102	102	103	102	102	103

[18] Statistics Canada. Centenarians in Canada, Age and sex, 2011 Census. Catalogue no. 98-311-X2011003. Retrieved from: http://www12.statcan.gc.ca/census-recensement/2011/as-sa/98-311-x/98-311-x2011003_1-eng.pdf

The table used to calculate the probability of survival is the CPM2014 Mortality Table, based on data from both public and private sector pension plans for 1999-2008, taken forward to 2024 using the CPM Improvement Scale B. For years beyond 2014, the same improvement scale was used to establish generational mortality rates. This mortality table and improvement scale were published by the Canadian Institute of Actuaries in February 2014.[19]

Based on the table, a 70-year-old Canadian would have a 25% chance of living to at least age 94 for a man and at least age 96 for a woman (25% column); by comparison, a 70-year-old Canadian would have a 10% chance of living to at least age 97 for a man and age 100 for a woman (10% column). A 70- year-old couple would have a 25% chance that one of the members of the couple will live to at least age 99 and a 10% chance that one of the members of the couple will live to at least age 101. Again, to be prudent, it is recommended that financial planners select a projection period where the probability of survival is no more than 25% (25% column).

With the example of the 70-year-old male/female couple, a projection period of 28 years (to age 98) could be used with the 25% probability that one of them may outlive their capital. It is important to remember that this table is intended to represent the average probability of survival for the entire population. People who are more financially comfortable and who have shown evidence of good health may find their life expectancy more toward the left end of the chart (the 10% survival group).

We are aware that the use of this mortality table will tend to overestimate life expectancy for people with fragile health or for smokers, for example. The financial planner should have a fulsome discussion with clients regarding their individual life expectancy before a long-term planning horizon is selected. Also, if these probabilities of survival are used to make different analyses than retirement income projections, such as to undertake scenario analysis for claiming public pensions at different ages, the financial planner will be able to use these probabilities of survival to make varying life expectancy assumptions to model different outcomes.

It is interesting to note that hereditary factors are not significant in predicting life expectancy,[20] while a client's income, education and lifestyle choices, such as the use of tobacco, can have a significant impact. Statistics Canada research published in 2015[21] found that non-smokers can expect to gain about three years of life expectancy, while the heaviest smokers stand to lose about nine years of life expectancy. In other words, average life expectancy for Canadians is reduced from 82 years to 73 years for adults who smoke.

It is also interesting to observe that as advancements in medical science occur, those who are younger today may have the opportunity to benefit from these advancements for a longer period than those who are older today. These effects can be seen in the 50% column in Probability of Survival table above by the initial decline in life expectancy as current age increases (e.g., a 30-year-old today has a higher life expectancy than their 60-year-old parent). This decline in life expectancy reverses at around age 80 because those who have already reached an older age today are more likely to continue to benefit from increased longevity.

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[19] https://www.cia-ica.ca/app/themes/wicket/custom/dl_file.php?p=34827&fid=13818

[20] Wilhelmsen, L., Svärdsudd, K., Eriksson, H., Rosengren, A., Hansson, P. O., Welin, C., ... & Welin, L. (2011). Factors associated with reaching 90 years of age: a study of men born in 1913 in Gothenburg, Sweden. *Journal of internal medicine*, *269*(4), 441-451.

[21] https://www150.statcan.gc.ca/n1/pub/82-624-x/2012001/article/11676-eng.htm

5. GUIDELINES FOR 2024

The Projection Assumption Guidelines for 2024 are the following:

a) Inflation	2.1%
b) Return rates[22]	
Short-term:	2.4%
Fixed income:	3.4%
Canadian domestic equities:	6.4%
Foreign developed-market equities:	6.5%
Foreign Emerging-market equities:	8.3%
c) Borrowing rate	4.4%
d) YMPE, MPE growth rate or salary	3.1% (inflation + 1%)
e) Probability of Survival	*See table in 4 e)*

Note that the administrative and investment management fees paid by clients both for products and advice must be subtracted to obtain the net return.

[22] These are nominal rates.

6. ILLUSTRATIVE APPLICATION

By way of example only, for a projection prepared this year for a portfolio holding investments in various asset classes, where the fees are 1.3% annually, we could use the following return assumptions:

Portfolio return assumptions based on a varied asset allocation (Illustrative Example Only)

Asset Classes Allocation	Projected annual gross return for each asset class	% of portfolio holdings in each asset class	Projected annual portfolio return (before inflation and income taxes)
Short-term:	2.4%	5%	2.4% times 0.05 = 0.1%
Fixed income:	3.4%	45%	3.4% times 0.45 = 1.5%
Canadian domestic equities:	6.4%	40%	6.4% times 0.40 = 2.6%
Foreign developed-market equities	6.5%	10%	6.5% times 0.10 = 0.7%
Foreign emerging-market equities	8.3%	0%	0.0%
Totals	n/a	100%	4.9%
Less Assumed fees	n/a	n/a	-1.3 %
Net return after fees	n/a	n/a	3.6%

This illustrative application is presented to provide guidance around calculating the projected net return after fees. **It is not intended in any way to offer a suggestion or recommendation by itself concerning asset allocation weightings**.

As well, these assumptions also depend on the investor's profile not changing over the years. If a client's investor profile is likely to change, it might be preferable to consider using an "average target allocation."

It is important to note that actual net portfolio returns will depend on actual product and portfolio-related fees and any other investment-related fees.

7. FINANCIAL GUIDELINES FOR PREVIOUS YEARS

The following table lists the financial guidelines for previous years along with their effective dates (the current guidelines are shown for comparison purposes):

Year	Effective date	Inflation	Growth of the YMPE or MPE	Short-term Return	Fixed income Return	Canadian domestic equities Return	Foreign Developed-market equities*	Foreign Emerging-market equities*	Borrowing rate
2009	Feb. 17	2.25%	n/a	3.75%	4.75%	7.25%	n/a	n/a	5.75%
2010	April 12	2.25%	n/a	3.75%	5.00%	7.25%	n/a	n/a	5.75%
2011	April 8	2.25%	n/a	3.50%	4.75%	7.00%	n/a	n/a	5.50%
2012	April 12	2.25%	n/a	3.25%	4.50%	7.00%	n/a	n/a	5.25%
2013	April 30	2.25%	n/a	3.25%	4.25%	7.00%	n/a	n/a	5.25%
2014	April 25	2.00%	n/a	3.00%	4.00%	6.50%	n/a	n/a	5.00%
2015	April 30	2.00%	3.00%	2.90%	3.90%	6.30%	n/a	n/a	4.90%
2016	June 30	2.10%	3.10%	3.00%	4.00%	6.40%	6.80%	7.70%	5.00%
2017	July 31	2.00%	3.00%	2.90%	3.90%	6.50%	6.70%	7.50%	4.90%
2018	April 30	2.00%	3.00%	2.90%	3.90%	6.40%	6.70%	7.40%	4.90%
2019	April 30	2.10%	3.10%	3.00%	3.90%	6.10%	6.40%	7.20%	5.00%
2020	April 30	2.00%	3.00%	2.40%	2.90%	6.10%	6.40%	7.10%	4.40%
2021	April 30	2.00%	3.00%	2.30%	2.70%	6.20%	6.60%	7.80%	4.30%
2022	April 30	2.10%	3.10%	2.30%	2.80%	6.30%	6.60%	7.70%	4.30%
2023	April 30	2.10%	3.10%	2.30%	3.20%	6.20%	6.50%	7.40%	4.30%
2024	April 30	2.10%	3.10%	2.40%	3.40%	6.40%	6.50%	8.40%	4.40%

*2009-2015 reports suggested a maximum 1% increase to Canadian domestic equities for foreign developed-market and foreign emerging-market equities as a guideline.

Note that the administrative and investment management fees paid by clients for products and advice must be subtracted to obtain the net return.