

Projection Assumption Standards

Institut québécois de planification financière

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1. INTRODUCTION

a) Title and reference

The set of standards presented here is called the Institut québécois de planification financière's *Projection Assumption Standards* (the Standards).

b) Background

An important facet of the financial planner's task is to make a variety of projections (retirement needs and retirement income, 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 assumptions to use in the preparation of these projections.

The Standards presented here are absolutely realistic, so judicious use of these assumptions will protect not only the financial planner but also the person for whom the projections are being prepared.

These *Projection Assumption Standards* go hand in hand with the IQPF's *Professional Standards*. For personal financial planning, the Standards should be seen and used as a complement to the IQPF's *Professional Standards*. For example, IQPF's *Professional Standards* recommend that several retirement projection scenarios be presented to the client to illustrate the sensitivity of the results:

"The financial planner shall clearly identify each fact and assumption, assign values and present at least two scenarios that illustrate the sensitivity of the projections to the economic and demographic assumptions... The financial planner shall ensure that the client understands the risk of prematurely depleting retirement capital if the data or assumptions change."

These Standards dictate the assumptions to be used and the financial planner should, depending on the situation, present one or several other scenarios using varied assumptions in order to meet the objective of ensuring the client is fully informed about the possible variability of the future results.

c) Updating and useful life

The Standards will be updated annually and published every spring on the IQPF website. Although some of the assumptions set out by these Standards may change from time to time, this does not mean that projections based on previously published assumptions are no longer valid. Projections are considered valid at the time of preparation.

d) Use and application

The use and application of these Standards is completely voluntary. Use of the Standards should nevertheless be disclosed using a (voluntary) statement such as the following:

- ♦ *Projections prepared using the Institut québécois de planification financière Projection Assumption Standards.*
- ♦ *Analysis prepared using the Institut québécois de planification financière Projection Assumption Standards.*
- ♦ *Study prepared using the Institut québécois de planification financière Projection Assumption Standards.*
- ♦ *Calculations made using the Institut québécois de planification financière Projection Assumption Standards.*

e) Effective date of the Standards

The Standards for 2014 come into effect on April 25, 2014.

2. GUIDELINES FOR ESTABLISHING THE STANDARDS

a) Use of external sources

The task force mandated by the Institut québécois de planification financière to prepare these Standards gathered information from reliable external sources. The purpose of the exercise was to establish a consensus for the preparation of the Standards. Using external sources implies that these Standards do not represent the opinion of the authors or the IQPF.

Using numerous sources also helps eliminate any potential bias that may be present in a single source.

b) Aim for stability

The fact that some of the sources used change less frequently – such as the assumptions issued for the Quebec Pension Plan actuarial analyses – ensures the Standards will remain stable.

c) Standards limits

These Standards in no way represent predictions about short-term returns and should not be used for this purpose.

The Standards are prepared for projections and analyses over several years (for example, retirement income projections or life insurance needs).

Projections or analyses using assumptions that differ from the Standards may be used, but in this case, justification of the differences should be provided.

For example, in the context of immediate or imminent disbursement, the use of the return standards may be set aside in favour of the real return on the investments used (such as guaranteed investments or bonds held to maturity).

The task force examined the possibility of establishing standards for other asset classes but elected to cover only the principal asset classes, to avoid publishing too many standards. The seven standardized financial parameters (the five in Section 4 and the GICs and foreign equities discussed in Section 3) constitute the fundamental bases from which the user can project other consistent assumptions (for municipal bonds, for example).

No standard has been set for changes in the real estate market. The taskforce avoided creating a specific standard for the following reasons:

- Separate standards would have been required for residential, commercial and industrial buildings

- A sort of regional index would also have been necessary (the real estate market behaves differently in Montréal, Québec City, Gatineau and the Saguenay)

The use of an inflation-based assumption for real estate seems appropriate, with a suitable explanation to the client on the sensibility of this approach.

3. ASSUMPTIONS SUBJECT TO STANDARDS

Two types of assumptions are subject to standards: financial assumptions (inflation, short-term returns, fixed-income returns, Canadian equity returns and borrowing rate) and demographic assumptions (life expectancy).

a) Inflation

This assumption is central to the preparation of long-term projections. The basis for the calculation is weighted as follows:

- ◆ 20% of the assumption used in the most recent QPP actuarial analysis
- ◆ 20% of the assumption used in the most recent CPP actuarial report
- ◆ 20% of the result of the Towers Watson annual portfolio managers survey, weighted as follows: 1/15 of the short-term projection, 4/15 of the medium-term projection, 10/15 of the long-term projection
- ◆ 20% of the general assumption of the Aon Hewitt (formerly Aon Consulting) index
- ◆ 20% of the current Bank of Canada target inflation rate

The result of this calculation will be rounded to the nearest 0.25%.

A discussion was also held about the use of separate inflation rates for older individuals or high earners. Two studies by Radu Chiru, of Statistics Canada¹, demonstrate that there may be small differences in inflation for these two groups of Canadians as compared to others, but these differences are not deemed to be material.

b) Nominal returns (before fees)

For return, we will establish three assumptions, one for short-term investments (91-day T-bills), one for Canadian fixed-income investments, and a third for total returns (including dividends) on Canadian shares. These assumptions are for gross nominal returns (including inflation).

The basis for the calculation is weighted as follows for the three assumptions listed above:

- ◆ 20% of the assumption used in the most recent QPP actuarial analysis, weighted as follows: 50% of the medium-term assumption (2013 to 2022) and 50% of the long-term assumption (2023 and up)
- ◆ 20% of the assumption used in the most recent CPP actuarial report (2019 and up)

¹ Is Inflation Higher for Seniors? (2005) Catalogue no. 11-621-MWE2005027 and Does Inflation Vary with Income? (2005) Catalogue no. 11-621-MWE2005030

- ♦ 20% of the result of the Towers Watson annual portfolio managers survey, weighted as follows: 1/15 of the short-term projection, 4/15 of the medium-term projection, 10/15 of the long-term projection
- ♦ 20% of the general assumption of the Aon Hewitt (formerly Aon Consulting) index
- ♦ 20% of the historic return on these classes of assets over the 50 years ending the previous December 31 (adjusted, for inflation, according to what follows)

The historical component will be based on the S&P / TSX (Canadian shares) index, the DEX Universe BondMC index (Canadian bonds), the DEX 91-day T-bill index and their predecessors. For the sake of consistency, the indices expressed in real returns (returns reduced by the CPI inflation rate as published by the Bank of Canada) will be increased by the future inflation assumption (before rounding) presented in paragraph a.

The following considerations or adjustments are also applied:

i) Fixed-income securities

For the QPP and CPP fixed-income security assumption, a margin of 0.75% is deducted to convert a long-term bond rate (theirs) into a traditional bond portfolio rate.

ii) Canadian equity

For investments in Canadian shares, we deduct a safety margin of 0.5% from this weighting to compensate for the non-linearity of the long-term returns.

iii) Foreign equity

For shares that are not Canadian, the same assumptions should be used. An additional annual return of a maximum of 1.00% could also be used, however. In terms of changes in the respective value of currencies, since the net effect over the very long term should be nil, the task force decided not to create a standard for this assumption.

iv) Type of equity return

In a non-registered investment environment, assumptions must obviously take income taxes into account. For significant sums, it might be appropriate to divide the return into two categories: dividends and capital gains. Historically, from 25% to 50% of overall equity returns has been made up of dividends. It 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.

v) Guaranteed investment certificates (GIC)

A comparative analysis over more than 40 years reveals a slight premium for GICs over T-bills. An additional annual return of a maximum of 0.25% over the short-term return assumption could be used for 5-year GICs.

The results of all these calculations will be rounded to the nearest 0.25%.

c) Considerations concerning fees

Depending on the type of management the client uses (direct, mutualized, private, etc.), fees from 0.5% to 2.5% should be subtracted, except for GIC investments, since the fees are included in the rates for this type of product. Finally, we do not adjust the assumptions to reflect the value-added potentially generated by the manager.

d) Borrowing rate

A great number of factors obviously influence the available borrowing rate: the type of loan, the borrower's credit rating, etc. But in light of 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

– the assumption for the borrowing rate will be equal to the assumption for the 91-day T-bill rate presented in paragraph a, plus 2.00% for an average credit rating.

e) Life expectancy

All income projections representing disbursement of an asset must factor in the life expectancy of the individual at the current age. We will therefore use a mortality table.

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

- ◆ Gender, man or woman
- ◆ Smoker or non-smoker status
- ◆ Place of residence (e.g., province, country)
- ◆ Group that has shown evidence of good health (for life insurance pricing)
- ◆ Retirees

The Statistics Canada Generation 1951 mortality table for Quebec (91F0015MPF) will be used as the basis of calculation. But using life expectancy as the target date for asset depletion is risky, since about 50% of people surpass this age, which means 50% of people will outlive their capital.

We recommend using a probability of survival² of less than 50%. We feel that the minimum projection should be no more than a 25% survival risk. We nevertheless present other probabilities of survival (from 10% to 50%) to allow financial planners to better illustrate their point for the client.

² Chapter 1 of the “Retraite” section in *La Collection de l'IQPF* explains the difference between life expectancy and probability of survival.

Using a lower probability of survival protects us from future improvements in mortality. Note that this concept of capital depletion and margin will be especially important in the preparation of retirement projections, usually after the age of 40.

The table below sets out these assumptions:

Life expectancy based on various survival risks

Age	10%			15%			20%			25%			30%			35%			40%			45%			50%		
	M	W	M/W																								
10	95	99	99	93	97	98	91	95	97	90	94	96	89	93	95	87	92	94	86	91	93	84	89	92	83	88	91
15	95	99	99	93	97	98	91	95	97	90	94	96	89	93	95	87	92	94	86	91	93	84	89	92	83	88	91
20	95	99	99	93	97	98	91	95	97	90	94	96	89	93	95	87	92	94	86	91	93	84	89	92	83	88	91
25	95	99	99	93	97	98	91	96	97	90	94	96	89	93	95	87	92	94	86	91	93	84	89	92	83	88	91
30	95	99	99	93	97	98	91	96	97	90	94	96	89	93	95	87	92	94	86	91	93	85	90	92	83	88	91
35	95	99	99	93	97	98	92	96	97	90	94	96	89	93	95	87	92	94	86	91	93	85	90	92	83	88	91
40	95	99	99	93	97	98	92	96	97	90	94	96	89	93	95	88	92	94	86	91	93	85	90	92	83	88	91
45	95	99	100	93	97	98	92	96	97	90	94	96	89	93	95	88	92	94	86	91	93	85	90	92	84	88	92
50	95	99	100	93	97	98	92	96	97	90	94	96	89	93	95	88	92	94	86	91	93	85	90	92	84	89	92
55	95	99	100	93	97	98	92	96	97	90	94	96	89	93	95	88	92	94	87	91	93	85	90	93	84	89	92
60	95	99	100	94	97	98	92	96	97	91	95	96	89	93	95	88	92	94	87	91	94	86	90	93	84	89	92
65	95	99	100	94	97	98	92	96	97	91	95	96	90	94	95	89	93	95	88	91	94	86	90	93	85	89	92
70	96	99	100	94	97	99	93	96	98	92	95	97	90	94	96	89	93	95	88	92	94	87	91	93	86	90	93
75	96	99	100	95	98	99	93	97	98	92	95	97	91	94	96	90	93	95	89	92	95	88	91	94	87	90	93
80	97	100	101	95	98	99	94	97	98	93	96	97	92	95	97	91	94	96	91	93	95	90	92	95	89	91	94
85	98	100	101	97	99	100	96	98	99	95	97	98	94	96	98	93	95	97	92	94	96	92	94	96	91	93	95
90	100	101	102	98	100	101	98	99	100	97	98	100	96	98	99	96	97	99	95	97	98	95	96	98	94	95	97
95	102	103	104	101	102	103	100	101	102	100	101	102	99	100	101	99	100	101	99	99	101	98	99	100	98	99	100
100	105	106	106	104	105	106	104	104	105	103	104	105	103	103	104	103	103	104	102	103	104	102	103	104	102	102	103

The chart shows that a projection for a 65-year-old retiree will be valid if the capital is not depleted before the age of 91 for a man and 95 for a woman (25% chart). With a 65-year-old couple, the capital should last to the age of 96. The life expectancy presented for a couple illustrates the likelihood that one of the members will survive to this age.

It is important to remember that this chart reflects the average mortality for the entire population of Quebec. People who do not use tobacco, people from younger generations, people who are more financially at ease, and people in good health are more likely to be in the 10% survival group.

The use of tobacco can have a significant impact on life expectancy. A Statistics Canada publication from 2001³ concludes that a 45-year-old smoker will survive 20% to 25% fewer years, depending on sex, than a non-smoker of the same age. This can be taken into consideration by using the 30% column in the table above for smokers and the 20% column for non-smokers.

³ Impact of smoking on life expectancy and disability <http://www.statcan.gc.ca/daily-quotidien/010622/dq010622a-eng.htm>

ASSUMPTIONS

The chart above is not the final word on survival risk, because there will always be those who are very long-lived. Since even planning to age 100 cannot eliminate all possibilities, we encourage the financial planner to incorporate a “life annuity” component if the client’s objective is to provide a life income for every possible situation.

4. STANDARDS FOR 2014

For 2014, the application of the principles outlined above generates the following assumptions:

a) Inflation	2.00%
b) Return	
Short term:	3.00%
Fixed income :	4.00%
Canadian shares:	6.50%
c) Borrowing rate:	5.00%
d) Life expectancy	see table in 3 e)

5. SAMPLE APPLICATION

By way of example, for a projection prepared in 2014 for balanced portfolios allocated based on different scenarios in a mutual fund environment where management fees are variable, we would use the return assumptions presented in the table below:

Portfolio return assumptions based on the following asset				
Investor profile:		Conservative	Balanced	Dynamic
Allocation	Short term:	5%	5%	5%
	Fixed income:	70%	45%	20%
	Canadian equity:	25%	50%	75%
Gross return:		4.58%	5.20%	5.83%
Fees⁴:		1.62%	1.80%	1.99%
Net return:		2.96%	3.40%	3.84%
Rounded net return:		3.00%	3.50%	3.75%

Note that the results of all these calculations are rounded to the nearest 0.25%. These assumptions depend on the idea that the investor's profile will not change over the years. If the profile is likely to change, it might be preferable to use "average target allocation."

6. FINANCIAL STANDARDS FOR PREVIOUS YEARS

The following table lists the financial standards for previous years with their effective date (the current Standards are shown for comparison purposes):

	2009	2010	2011	2012	2013	2014
Effective date:	February 17, 2009	April 12, 2010	April 8, 2011	April 12, 2012	April 30, 2013	April 25, 2014
Inflation:	2.25%	2.25%	2.25%	2.25%	2.25%	2.00%
Return - short term:	3.75%	3.75%	3.50%	3.25%	3.25%	3.00%
Return - fixed income:	4.75%	5.00%	4.75%	4.50%	4.25%	4.00%
Return - shares:	7.25%	7.25%	7.00%	7.00%	7.00%	6.50%
Borrowing rate:	5.75%	5.75%	5.50%	5.25%	5.25%	5.00%

⁴ Average management fee for a mutual fund based on annual fees of 2.25% for the Canadian equity portion and 1.50% for the fixed-income portion.