

Inflation and  
Life Expectancy:

A DANGEROUS  
Combination for  
Your RETIREMENT?



AUTORITÉ  
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Partners  
for Retirement  
Financial Security

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Ms. Jeanne Louise Calment, a citizen of France, died in 1997 at the age of 122. She appeared in a film when she was over 100. What about you? When do you expect to retire and how long will your retirement last? Will you have the financial resources needed to take full advantage of your leisure time? At that time, what will the price tag be for the goods and services that you buy? If these questions interest you, this booklet will come in handy.

At the beginning of the 20th century, few Quebecers could expect to live past age 55. Retirement was not a cause for worry. It was the exception, not the rule. Today, the situation is very different. Now, a woman who retires at age 55 will, on average, live another 30 years and a man will live another 26 years. All that retirement time has a price attached to it. You will have to save more to live comfortably during all those years since you will have very little or no employment income.





## Life expectancy at birth

Life expectancy at birth is the average number of years that a new-born can expect to live. Since it is an average, some people will, in fact, die very young and others will live over a 100 years.

Life expectancy depends on a number of factors, including medical advances (better care for pregnant women and infants, new drugs and vaccines and surgical innovation), reductions in abject poverty (access to clean drinking water, better nutrition, etc.) and technological progress (refrigerators, electricity, heating, etc.). The factors are influenced by personal choices that may reduce life expectancy, such as smoking.

Since these factors vary from one country to another, life expectancy varies according to the place where a person lives. For example, life expectancy at birth is 67 years for a Russian, 73 for a Chinese person and 81 for a Quebecker.<sup>1</sup>

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Source:  
1 - United Nations, *World  
Population Prospects: The 2008  
Revision*.

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Did you know that during the last 50 years, the worldwide average life expectancy at birth has increased by about 20 years? It now is up to 65 years. In the Middle Ages, it was only about 25 years!<sup>1</sup>

Table 1 shows the increase in life expectancy in Québec from 1850 to the present time, with a projection for life expectancy in 2030.

TABLE 1

Life expectancy at birth in Québec, over time		
	Men (years)	Women (years)
Around 1850 <sup>2</sup>	40	40
1930 <sup>3</sup>	53	56
1965 <sup>3</sup>	68	74
Today <sup>4</sup>	79	83
2030 <sup>4</sup>	82	85

Sources :

1 - Jacques Dupâquier, *Histoire de la population française - Des origines à la renaissance* (approximation)

2 - Jacques Henripin, *Naître ou ne pas être, 1989, Institut québécois de recherche sur la culture* (approximation)

3 - *Base de données sur la longévité canadienne*, Département de démographie, Université de Montréal, [www.bdldc.umontreal.ca](http://www.bdldc.umontreal.ca)

4 - *Analyse actuarielle du Régime de rentes du Québec au 31 décembre 2006*, Régie des rentes du Québec, 2007

As you can see, there has been a continual increase in life expectancy over the years. That means that there will be more and more people reaching retirement age and for some people, retirement will last longer. That reality has an important effect on your financial management. Since you may be retired for a longer time, you will need to put aside more retirement savings. The younger you are now, the more likely it is that your life expectancy will increase before you reach retirement. You will have to take that into account in making your retirement plans.

### Life expectancy at a given age

As we saw in Table 1, the average life expectancy at birth for Quebeckers is now 83 years. However, if a woman is already 83 years old, how many more years can she expect to live? One? Less than one? Up to now, we have been talking about life expectancy at birth. We can also measure life expectancy at a given age. For example, an 80-year old woman has a life expectancy of 90 years. Table 2 shows the average number of years based on age and sex.



TABLE 2

Life expectancy in 2009 at a given age According to the Actuarial Report of the Québec Pension Plan as at 31 December 2006		
Age (years)	Men (years)	Women (years)
0 [at birth]	79.1	83.5
20	79.7	83.9
25	79.8	84.0
35	80.1	84.2
45	80.6	84.5
55	81.5	85.2
60	82.2	85.7
65	83.2	86.5
70	84.4	87.4
75	86.1	88.6

Since women have a longer life expectancy than men, women generally have a longer retirement. Therefore, they must save more money for retirement. It should be noted, however, that the difference in life expectancies for men and women is becoming smaller with the passage of time.

## Why is life expectancy at a given age not the same as life expectancy at birth?

For men, the average life expectancy at birth is 79.1 years. At age 35, it has risen to 80.1 years. There has been an increase of a year. Why is that? A man who lives to age 35 has survived all the dangers of death up to that age and is assured that death will not occur until after that age. Thus he has a better chance of living longer than a newborn, who may not be able to overcome all the risks of death that could arise during the first 35 years of life.

Careful retirement planning is required. If you plan for retirement on the basis of your theoretical life expectancy, you may be in for a surprise! Statistically speaking, you have a 50% chance of reaching the theoretical age. However, you also have a 50% chance of living longer than expected and you could run out of money. In making your retirement plans, you should give yourself room to manoeuvre, for example, by assuming that you may live to the age of 90 (or even longer).



Did you know that three in eight women who are 65 years old now will live to age 90? For men, the figure is one in five.

Now you understand that your retirement may last a long time. That means inflation will have a significant impact on your purchasing power during that period of your life.



## Inflation and the consumer price index

Inflation is a general increase in the prices of goods and services, accompanied by a decrease in the purchasing value of money. On the other hand, if prices fall, your purchasing power increases. To measure inflation, we usually use the Consumer Price Index (CPI), which makes it possible to estimate the average change in the prices of goods and services by comparing prices from one year to the next.

Inflation is all around us but its effects vary from one situation to another. For example, inflation does not affect workers' pay in the same way that it affects the prices of houses. The following table shows the effect of inflation on the average price of a house and on average employment income.

TABLE 3

Examples of the effects of inflation			
	1975	2009	Average annual increase
Average employment income	\$9,000 <sup>1</sup>	\$36,000 <sup>2</sup>	4.2%
Average price of a house <sup>3</sup>	\$33,000	\$228,000	5.8%

Sources :  
The figures are rounded to the nearest thousand dollars.

1 - Annual statistics of the Québec Pension Plan

2 - *Actuarial Report of the Québec Pension Plan as at 31 December 2006*

3 - Average Multiple Listing Service® price for houses in Québec, Canadian Real Estate Association

For the past 10 years, the annual inflation rate has been below 3%. On a long-term basis, the experts expect the rate to be around 2.5%.



Did you know that in 1981, the annual inflation rate peaked at 12.5%? Since 1971, the rate in Canada has, on average, been about 5%.

When you plan for retirement, you will have to take inflation into account. Consider the case of Xavier. Suppose he wants to retire at age 60 and have a retirement income equal to 70% of his pre-retirement earnings. He is 35 years old and currently makes \$40,000 a year. He expects his pay to increase by 3% a year, reaching \$83,751 at the end of his working life. If inflation increases at the same rate as his salary, at age 60 his purchasing power will be the same as it is now. Thus, since he wants a retirement income equal to 70% of his pre-retirement earnings, he must arrange to have an annual retirement income of \$58,626. How much will he have to put aside each year to maintain his purchasing power during retirement? The *Mon plan, je le fais maintenant* calculator (French only) is available on CD-ROM or on-line. To obtain a copy, visit either the Question Retraite Web site or the Autorité des marchés financiers Web site.

## Return on investments

To reach your retirement goals, you are probably putting some money aside. Perhaps you have some stocks, bonds, guaranteed investment certificates (GICs) or other investments. Do you know how much income those investments will provide? How much should you invest to live the retirement that you dream about? Table 4 shows the amount accumulated, in current dollars, on an annual investment of \$1,000 according to several rates of return and the number of years your money is invested.

TABLE 4

Amount accumulated on an annual investment of \$1,000 (in current dollars)				
Number of years	Annual rate of return			
	5%	6%	7%	8%
10	\$11,133	\$11,750	\$12,405	\$13,099
15	\$17,555	\$19,019	\$20,622	\$22,380
20	\$24,626	\$27,409	\$30,563	\$34,142
25	\$32,410	\$37,094	\$42,591	\$49,051
30	\$40,981	\$48,274	\$57,142	\$67,947
35	\$50,416	\$61,180	\$74,747	\$91,896

Assumption:  
The annual inflation rate is 3%.

As the table shows, if you begin to save early, the amount accumulated will be much larger. A high rate of return will also increase dramatically the amount accumulated. The inflation rate has a negative effect on investments since it reduces the real rate of return. For example, if you have an investment whose rate of return is 7% and the inflation rate is 3%, your real rate of return will only be about 4%. Thus, if you put aside \$1,000 a year at a rate of return of 7% (before inflation) for 25 years, you will accumulate \$42,591 in current dollars.

As Table 5 shows, the average rate of return on stocks and bonds was higher than the mean inflation rate from 1971 to 2008.

**Warning: Past performance is not a guarantee of future performance!  
Past rates of returns may not be possible in future years.**

TABLE 5

Average annual inflation rates and rates of returns on Canadian stocks and bonds (average from 1971 to 2008)	
Inflation (CPI)	4.6%
Bonds	9.3%
Stocks	9.4%

Source:  
*Report on Canadian Economic  
Statistics 1924-2008*, Canadian  
Institute of Actuaries

To fight inflation, workers generally get an annual increase in earnings. Are retirement earnings increased too?

### Retirement earnings

The benefits paid under the Québec Pension Plan and the Old Age Security pension and the Guaranteed Income Supplement are increased according to changes in the CPI. Thus, inflation does not have a negative impact on those earnings. For more information about those programs, consult the *Guide to Financial Planning for Retirement*.

If you are a member of a defined benefit pension plan sponsored by your employer, you can ask the plan administrator whether or not your benefits under the plan will be indexed.

Retirement earnings from personal savings are usually not indexed. That means that their purchasing power decreases over time. To avoid a decrease, you can use several strategies, such as using your savings to purchase an indexed annuity.

### An indexed annuity

An indexed annuity is an annuity whose payments increase regularly to offset the effects of inflation. Some annuities offer a partial protection against inflation. For example, an annuity may offset inflation only up to a certain percentage. It must be noted that the purchase price of an indexed annuity will be higher than the price of an annuity that is not indexed.





## At what age will you retire?

The earlier you retire:

- the less time you will have to save the money needed for retirement;
- the less you will benefit from returns on your investments;
- the more time inflation will have to negatively affect your earnings;
- the more savings you will need to provide income over a greater number of years.

Thus, you will have to put a lot more money aside each year before you retire. For example, if Xavier decides to retire at age 55 instead of age 60, his retirement pension will cost more and he will have five less years to contribute to it.

## Conclusion

As we have seen, life expectancy has increased greatly since the creation of mankind and it is still increasing. The probability is high that your retirement years will be many. During your working life, your purchasing power is the victim of inflation. The same will be true of your retirement earnings if they are not indexed. Those factors will have a significant impact on your retirement earnings. Good planning is essential to be sure that inflation, combined with increasing life expectancy, will not change your retirement dreams into a financial nightmare. How far along are you with your retirement planning?

## Question Retraite and l'Autorité des marchés financiers

If you wish to continue reading about financial planning for retirement, visit the Question Retraite Web site at [www.questionretraite.com](http://www.questionretraite.com) or the Autorité des marchés financiers Web site at [www.lautorite.qc.ca](http://www.lautorite.qc.ca).

### You will find the following publications:



#### **Investing to optimize retirement income**

This brochure presents and explains registered retirement savings plans (RRSPs), investments that earn interest, investments that produce capital gains, labour-sponsored investment funds and the effects of a lower tax bracket after retirement.



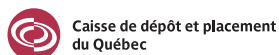
#### **Are you a first-home buyer? Benefit from the HBP while staying on course for retirement!**

This brochure explains how the HBP works and answers many important questions such as:

- Once I have paid the minimum HBP amount, is it advisable to make additional HBP repayments or to contribute to my RRSP?
- What is best? Using the down payment directly to buy the house or placing it in an RRSP and then withdrawing it under the HBP?
- What happens if I don't repay my HBP?

Question Retraite is a public private consortium dedicated to the promotion of financial security at retirement. It is an association of partners who encourage and organize activities to educate and inform Quebecers about the importance of financial security at retirement. Its members guide the public on how to achieve their planning goals. Among the activities sponsored by Question Retraite are the publication of the *Guide to Financial Planning for Retirement* and the presentation of Financial Planning for Retirement Month, each year in October.

## The members of Question Retraite are:



Institut québécois de  
planification financière



[www.questionretraite.com](http://www.questionretraite.com)