

Factors in timing the CPP withdrawal

When it comes to the question of when to take CPP, pensioners in Canada have a dilemma. Should they take the funds as early as possible, even though the annual value is reduced for each year the benefit is taken before the age of 65? Or should they delay the CPP benefit to the age of 65 (or beyond) to potentially benefit from higher annual payments, albeit delivered later in life?

Successful savers in Canada are likely conditioned to think that delaying consumption is the default answer to building wealth, but when it comes to the timing of the CPP payment it may be wise to take the payment as early as possible. To help our clients make better decisions on when to take CPP, in this paper we have synthesized the combined impacts of life expectancy, time value of money, inflation, CPP spousal death benefit and the Old Age Security clawback.

CPP Payment Details

As of 2018 the maximum annual CPP benefit for a 65-year-old is \$13,610. The CPP program was fully updated in 2013 to increase the benefit paid to those that waited beyond the age of 65 from 6% a year to 8.4% a year. As a result, at the age of 70 the maximum CPP benefit comes in at \$19,326.24, a figure that is 42% higher than the benefit at age 65. Table A provides these values on a monthly basis.

As of 2016, the CPP program finalized the decreased values that are paid out to pensioners that wish to take the pension before they reach the age of 65. The benefit is now reduced by 7.2% per year, resulting in a maximum CPP benefit of \$8,710.44, which is 36% lower than the benefit at age 65.

In addition, the CPP program has been updated to facilitate an increase in benefit for pensioners that continue to work between the ages of 60 and 70. This Post Retirement Benefit is a mandatory addition to employees under the age of 65 and an optional benefit for employees at or over the age of 65.

Table A: Maximum CPP by Age

Age to Start	Adjustment From Age 65 Benefit	Maximum Monthly CPP
60	-36.00%	\$725.87
61	-28.80%	\$807.53
62	-21.60%	\$889.19
63	-14.40%	\$970.85
64	-7.20%	\$1052.51
65	0%	\$1134.17
66	8.40%	\$1229.44
67	16.80%	\$1324.71
68	25.20%	\$1419.98
69	33.60%	\$1515.25
70	42.00%	\$1610.52

Life Expectancy

To accurately answer the question of when to take the CPP, one would require the exact date of death for absolute precision in their decision. Thankfully we do not know the date of our death, so we need to look for help elsewhere to answer this pension dilemma.

Using life expectancy information from Statistics Canada for 2017, it is expected that the average male will live to the age of 79 and the average female will live to age 83². There is a problem with this data, however. Using the commonly quoted life expectancy underestimates life span because as you age the likelihood increases that you will live beyond life expectancy measured at birth. For example, a woman at age 83 does not have a 100% probability of death at her current age, but will have an average life expectancy greater than age 91 in Canada³.

As a result, life expectancy statistics for 65-year-olds provide a better picture of how long Canadians can expect to collect the CPP benefit. Measured in 2015, the average life expectancy of a male and female aged 65 increases our expectations by about four years to age 84 for men and 87 for women³.

Table B: Measuring CPP Benefit Over Time

Age	Take CPP at 60		Take CPP at 65		Take CPP at 70	
	Annual Payment	Cumulative Payments	Annual Payment	Cumulative Payments	Annual Payment	Cumulative Payments
60	8,710.43	8,710.43	-	-		
61	8,710.43	17,420.85	-	-		
62	8,710.43	26,131.28	-	-		
63	8,710.43	34,841.70	-	-		
64	8,710.43	43,552.13	-	-		
65	8,710.43	52,262.55	13,610.04	13,610.04		
66	8,710.43	60,972.98	13,610.04	27,220.08		
67	8,710.43	69,683.40	13,610.04	40,830.12		
68	8,710.43	78,393.83	13,610.04	54,440.16		
69	8,710.43	87,104.26	13,610.04	68,050.20		
70	8,710.43	95,814.68	13,610.04	81,660.24	19,326.26	19,326.26
71	8,710.43	104,525.11	13,610.04	95,270.28	19,326.26	38,652.51
72	8,710.43	113,235.53	13,610.04	108,880.32	19,326.26	57,978.77
73	8,710.43	121,945.96	13,610.04	122,490.36	19,326.26	77,305.03
74	8,710.43	130,656.38	13,610.04	136,100.40	19,326.26	96,631.28
75	8,710.43	139,366.81	13,610.04	149,710.44	19,326.26	115,957.54
76	8,710.43	148,077.24	13,610.04	163,320.48	19,326.26	135,283.80
77	8,710.43	156,787.66	13,610.04	176,930.52	19,326.26	154,610.05
78	8,710.43	165,498.09	13,610.04	190,540.56	19,326.26	173,936.31
79	8,710.43	174,208.51	13,610.04	204,150.60	19,326.26	193,262.57
80	8,710.43	182,918.94	13,610.04	217,760.64	19,326.26	212,588.82
81	8,710.43	191,629.36	13,610.04	231,370.68	19,326.26	231,915.08
82	8,710.43	200,339.79	3,610.04	244,980.72	19,326.26	251,241.34
83	8,710.43	209,050.21	13,610.04	258,590.76	19,326.26	270,567.60
84	8,710.43	217,760.64	13,610.04	272,200.80	19,326.26	289,893.85
85	8,710.43	226,471.07	13,610.04	285,810.84	19,326.26	309,220.11
86	8,710.43	235,181.49	13,610.04	299,420.88	19,326.26	328,546.37
87	8,710.43	243,891.92	13,610.04	313,030.92	19,326.26	347,872.62
88	8,710.43	252,602.34	13,610.04	326,640.96	19,326.26	367,198.88
89	8,710.43	261,312.77	13,610.04	340,251.00	19,326.26	386,525.14
90	8,710.43	270,023.19	13,610.04	353,861.04	19,326.26	405,851.39
91	8,710.43	278,733.62	13,610.04	367,471.08	19,326.26	425,177.65
92	8,710.43	287,444.04	13,610.04	381,081.12	19,326.26	444,503.91
93	8,710.43	296,154.47	13,610.04	394,691.16	19,326.26	463,830.16
94	8,710.43	304,864.90	13,610.04	408,301.20	19,326.26	483,156.42
95	8,710.43	313,575.32	13,610.04	421,911.24	19,326.26	502,482.68
96	8,710.43	322,285.75	13,610.04	435,521.28	19,326.26	521,808.93
97	8,710.43	330,996.17	13,610.04	449,131.32	19,326.26	541,135.19
98	8,710.43	339,706.60	13,610.04	462,741.36	19,326.26	560,461.45
99	8,710.43	348,417.02	13,610.04	476,351.40	19,326.26	579,787.70
100	8,710.43	357,127.45	13,610.04	489,961.44	19,326.26	599,113.96



Crossover calculations

The earliest age at which a pensioner can start taking CPP is 60. Many Canadians choose this option, as taking CPP at age 60 provides five years of monthly cash flow to enjoy in comparison to someone that chooses to delay to 65. However, as we showed previously, the monthly benefit amount increases when delaying the payment. How can a retiring Canadian know if they should take CPP as early as possible or instead delay? One method is to calculate the total value of benefit received in connection to how long the pensioner was alive to capture the benefit. By calculating the total payments received through time using different starting ages for CPP, a crossover calculation can determine the age when the CPP benefit becomes higher from delaying payment.

Table B on page 4 shows examples of this crossover calculation. It is clear from these calculations that the total value of CPP dollars received by delaying the benefit to age 65 is greater after the pensioner reaches the age of 73 in comparison to the value received when starting at age 60.

In addition, should the pensioner reach the age of 81, the total value of dollars received is maximized by delaying the CPP start date to age 70. The higher annual payments received over those 12 years total an amount greater than is accumulated when starting CPP at age 65.

Using these standard benefits, if a retiree can anticipate a life expectancy that is greater than 73 or 81 then the decision appears to be quite simple. Using the average life expectancy data measured at age 65 for Canadian men and women, 84 and 87 respectively, the correct choice would be to delay CPP to age 70 for both men and women given the crossover data shown in Table B.

Time value of money

Missing in common CPP payment analysis, including the standard calculations reported above, is the time value of money. A more accurate calculation would include the true value of receiving dollars earlier, and growing these dollars at the pensioner’s personal rate of return. The higher the rate of return that a pensioner can receive on their investments, the more valuable receiving funds early will be for them. Factoring investment return on cash flows into our crossover analysis pushes out the crossover age, indicating an increase in the benefit received from taking CPP sooner rather than later.

For example, assuming a growth rate of 4% on the funds received from CPP, it takes to age 76 for the total value of the pension benefits to be close to equal between starting CPP at 60 and waiting to take CPP at 65. In other words, with the time value of money included, a pensioner would now have to live four years longer to justify waiting until age 65 to start their CPP payments. Likewise, assuming the same investment growth rate of 4%, the crossover age extends out to age 88 for pensioners that decide to delay taking CPP until age 70.

In referencing table C below, it is evident that by including reinvestment into the calculations, arguments to delay CPP to age 65 and beyond to age 70 become weaker. Therefore, when considering life expectancy figures in Canada, when expected returns are over 2% the majority of pensioners would be unwise to wait to take their CPP at the age of 70.

Table C: Measuring CPP Benefit Through Time with Investment Return

Inflation	Investment Return	Scenario 1: Take CPP at 60	Scenario 2: Take CPP at 65	Scenario 3: Take CPP at 70
		Optimal Age Range	Optimal Age Range	Optimal Age Range
0%	0%	60 - 72	73 - 80	81 and Over
	2%	60 - 74	75 - 83	84 and Over
	4%	60 - 76	77 - 87	88 and Over
	6%	60 - 79	80 - 97	98 and Over

Inflation

The second factor that is missing from standard CPP benefit calculations is the inflation factor. Given that CPP is a benefit that will expand with the general inflation levels in Canada, it is important to factor in different inflation scenarios into our calculation to see how the crossover ages can change under different payment start dates. By looking at the accumulated benefit payments under varying levels of inflation, the results start to shift as the expected inflation variable is increased. Higher inflation appears to support starting CPP earlier in life.

For example, a 2% inflation adjustment to the projected cash flows moves the crossover age earlier by one year to age 72 for taking CPP at age 65. However, the same inflation adjustment will delay the crossover age by three years to age 84 for pensioners that choose to delay CPP to 70. At a 4% inflation factor, the crossover stays constant at the age 65 benefit level but moves out a further four years to age 88 for the age 70 start date, providing more support for an earlier CPP starting age.

When a rate of return is also added alongside an annual inflation adjustment, the results start to shift dramatically. The calculations extend out the timeframe where CPP taken at age 65 remains the optimal strategy over the CPP at 70 scenario. As a result, it is clear that when inflation is factored into the timing decision of CPP, delaying CPP to age 70 is rarely an optimal strategy given current life expectancy figures in Canada.

Spousal Death Benefit

One area that can be overlooked in CPP benefit planning is that of the spousal death benefit. Assuming the deceased spouse was eligible for the CPP benefit, the surviving spouse can have their annual payment increased to the maximum value that would have been received if the benefit was taken at age 65. So if you have taken CPP at the standard age of 65, there will be no extra benefit provided to you via this death benefit program because the benefit is capped at the age 65 amount. But, had you taken CPP between the ages 60 to 64, there is potential for the surviving spouse to

Table D: Measuring CPP Benefit Through Time with Investment Return and Inflation

Inflation	Investment Return	Scenario 1: Take CPP at 60	Scenario 2: Take CPP at 65	Scenario 3: Take CPP at 70
		Optimal Age Range	Optimal Age Range	Optimal Age Range
1%	0%	60 - 72	73 - 82	83 and Over
	2%	60 - 73	74 - 84	85 and Over
	4%	60 - 75	76 - 89	90 and Over
	6%	60 - 77	78 - 100	101 and Over
2%	0%	60 - 71	72 - 83	84 and Over
	2%	60 - 72	73 - 86	87 and Over
	4%	60 - 74	75 - 91	92 and Over
	6%	60 - 76	77 - 104	105 and Over
3%	0%	60 - 71	72 - 85	86 and Over
	2%	60 - 72	73 - 88	89 and Over
	4%	60 - 73	74 - 94	95 and Over
	6%	60 - 75	76 - 109	110 and Over
4%	0%	60 - 71	72 - 87	88 and Over
	2%	60 - 71	72 - 91	92 and Over
	4%	60 - 72	73 - 98	99 and Over
	6%	60 - 74	75 - 116	117 and Over

have their personal benefit payment increased to that of the level given at age 65.

Using figures for 2018 we can follow an example of a married couple that elected to receive CPP at the age of 60. This decision gives them a maximum individual benefit of \$8,710.44. On the death of a spouse, the surviving spouse is able to increase their CPP to the amount available as if they had started to receive CPP at age 65. Regardless of the timing of a spouse death, the benefit to the surviving spouse in this example would be increased to \$13,610.04. For 2018 then, the increase to the surviving spouse who is 60 years old could be as high as \$4,899.60 annually, which is a 56% increase to the benefit. As a result, should a partner's health be in question, it may be wise to start the CPP benefit at age 60. This provides access to CPP funds five years earlier and the added protection from the increase in the CPP benefit to the age 65 level should a spouse pass away.

Other Factors to Consider

The Risk of Outliving your Savings

Longevity risk should be taken into account if one's net worth and spending expectations are not of a level that can support a long life. Given that the CPP program is fully backed by the Canadian government along with an adjustment for inflation, delaying CPP means the spending risk of outliving your savings will decrease. Even if mathematically the expected personal benefits are higher from taking CPP at 60 or 65, having a higher base CPP benefit to support a pensioner's life after age 70 could be a better risk management strategy overall. For this planning to fit, a pensioner would delay taking CPP, spend down on their personal savings earlier in retirement and then let the higher CPP benefit support their spending needs from age 70 and on.

Managing Old Age Security Clawback

Managing taxable income in connection to the Old Age Security Benefit is another factor to consider when timing the CPP payment. For some Canadians the location of investments in RRSP or corporate accounts can impact the benefits received through OAS and the related clawback for high income earners.

In 2018, we start to lose \$0.15 for every dollar of extra personal income over \$75,910. A total elimination of OAS benefit occurs at individual income levels of \$122,843 and above. While taking CPP early does lower the consistent annual benefit, financial planning may show that not having any CPP income could be preferential. In cases where RRSP funds needed to be deregistered to lower overall taxation of registered savings, delaying CPP could allow for extra funds to be deregistered and not negatively impact the OAS benefit. This is also similar for corporate assets that are needed to be pulled into personal names.

Closing thoughts

As we have shown above, investment return, inflation and longevity are important factors to consider when selecting your age to receive the CPP benefit. Should you have questions on this planning, we at Pavilion Investment House are more than willing to help you figure out your optimal CPP strategy.

In terms of longevity it is important to remember that half of the population will pass away before the average age and as such you need to stay alive for your payment decision to be correct. By taking early CPP you are ensuring that you are correct in your decision for a number of years. But the longer you enjoy retirement, the more your decision will be proven wrong. The silver lining is that if you are fortunate enough to be alive beyond the crossover date that would have maximized your CPP benefit, you have the luxury of being alive to tell your friends "that you wish you would have waited".

References

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3. Statistics Canada. Life expectancy and other elements of the life table, Canada and provinces Table: 39-10-0007-01 (formerly CANSIM 053-0003)



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