

# Managing sequencing risk to optimize retirement income

A key strategy for stable wealth  
decumulation

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## Introduction: what is sequencing risk?

For many advisors, the **long-term rate of return** is generally one of the key factors they use when it comes to measuring the success of their clients' investments, along with the risks and variability of returns that come with that rate of return. Throughout most of their lives, as clients accumulate assets, a successful strategy likely involves two elements:

designing an appropriate asset mix to balance out risks and potential returns

contributing regularly to take advantage of market volatility through dollar cost averaging, whenever possible

However, things change as clients begin to look at drawing income from the assets they've accumulated over the years.

An article introduced in 1994 by William Bengen, "Determining Withdrawal Rates Using Historical Data" provides insight as to why the strategy may need to change as investors approach retirement. Once retirement withdrawals begin, looking at long-term rates is not enough; the **sequence** of returns in retirements matters too.

This is because of something called '**sequencing risk**' – which refers to the impact of the order in which your investment returns occur. The annualized rate of return may be the same for two scenarios, however the absolute dollar return can look drastically different – leaving one investment portfolio with a much shorter lifespan than the other.

A simple way to think of sequencing risk is to compare it to something we're all likely familiar with – **dollar cost averaging**. Throughout the accumulation phase of investing, it entails investing fixed amounts of money at regular intervals over a long period of time, no matter if the investment is going up, down or sideways. This aims to take advantage of volatility to help lower the average cost basis over time.

For retirees in the decumulation phase, it may be surprising to hear that dollar cost averaging is still at play, however where before volatility was seen as an ally to take advantage of, now it needs to be managed somewhat differently as investors start to draw down their nest eggs.

In retirement, regular withdrawals of capital are required, if prices fall, the retiree is forced to sell more units simply because more units are required to meet the regular withdrawal amount. This reduces the remaining portfolio size at a greater rate and leaves a greater burden on the remainder of the portfolio to recover from losses – which could result in retirement savings running out much sooner than anticipated, especially when negative returns occur early in the process. This, in turn, makes longevity risk, the risk that investors outlive their savings, much more real. As risk is needed in order to earn required returns, which in turn means increased volatility, **reducing** and **smoothing** these, rather than eliminating them, will help reduce this risk over time.

Once the switch flips to retirement, the risk management strategy has to flip as well; what worked in the accumulation phase may not work as well moving forward.

*Sequencing risk is the idea that the order that returns occur in can impact the overall return (or absolute dollar return) of a portfolio.*

## Illustrative scenarios

To illustrate the significance of sequencing risk, we'll look at three different scenarios all starting with an initial investment of \$500,000. Each scenario achieves an annual rate of return of 5% over a 10-year period, but the pattern of returns varies depending on when the returns are earned for each:

	Scenario A	Scenario B	Scenario C
Year	Early negative returns	Early positive returns	Constant returns
1	-5%	23%	5%
2	-10%	15%	5%
3	5%	7%	5%
4	-4%	12%	5%
5	8%	6%	5%
6	6%	8%	5%
7	12%	-4%	5%
8	7%	5%	5%
9	15%	-10%	5%
10	23%	-5%	5%
<b>Total return</b>	<b>67%</b>	<b>67%</b>	<b>67%</b>
<b>Annualized return</b>	<b>5%</b>	<b>5%</b>	<b>5%</b>

Figure 1: no withdrawals

Scenario A suffers from negative returns in the early years, while Scenario B suffers these same negative returns in the later years.

Figure 1 shows that when there are **no additions or withdrawals** being made on the portfolio, each scenario ends with the same market value after ten years of investment.

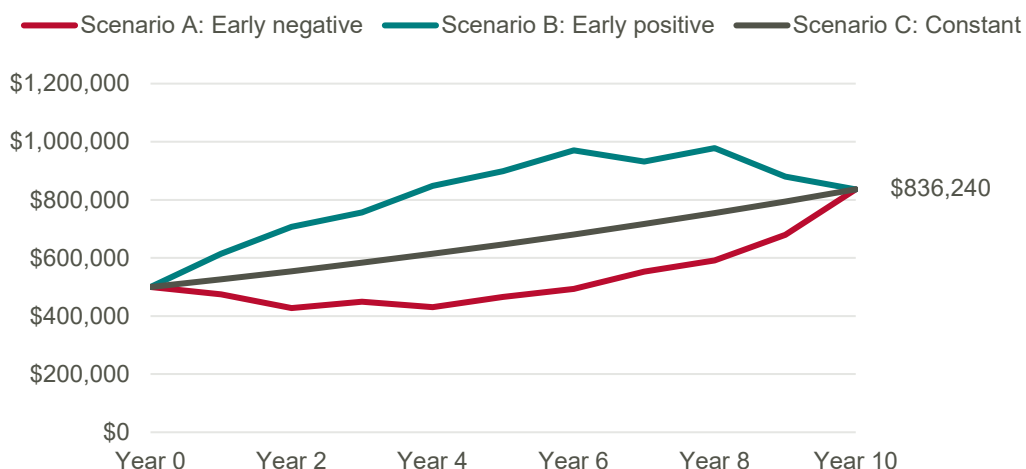


Figure 2: annual withdrawals

However, as investors shift into the retirement phase of their life and start making **regular withdrawals** from their portfolios, the end results for each can look drastically different. Figure 2 assumes an annual withdrawal rate of \$30,000. Where the investor experiences negative returns early in their investment timeline (Scenario A), their market value ends up being significantly less than the other scenarios after only ten years (difference of \$181,230, or 34% less than Scenario B). Remembering that the long-term annual return on these scenarios are all equal at 5%, these results can be surprising. However, it makes sense when you realize that each portfolio's dollar value – the amount the annual return is compounding against – is declining as withdrawals are made throughout the period, so the order of returns is important.

*Sequencing risk has no impact on a portfolio if **no** withdrawals are being made. But once regular withdrawals occur, the order of returns plays a big role in the overall longevity of the portfolio.*

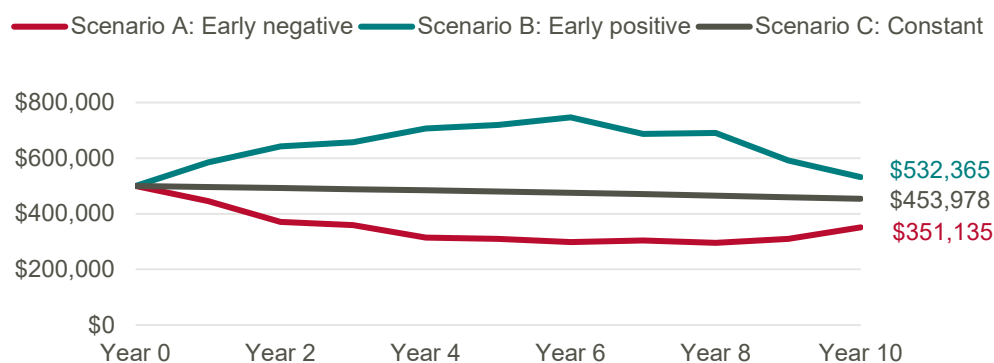
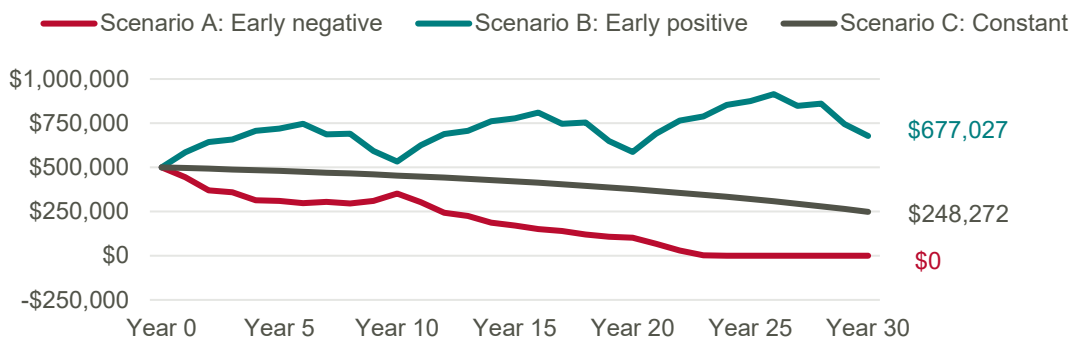


Figure 3: extended period of withdrawals

Finally, since we plan for retirement to last for more than just ten years, we've extended the timeline out to 30 years, repeating the same 10-year sequence three times within each scenario. In Figure 3 you can see how this difference escalates **over time**. Scenario A is completely depleted by year 24, while Scenario B has a 35% gain off the initial investment of \$500,000.

This shows a very big difference for something that may not be top of mind come retirement. Illustrations are great, but how would this look in a more realistic scenario? Let's dive a little deeper.



## Real-world scenarios: longevity matters

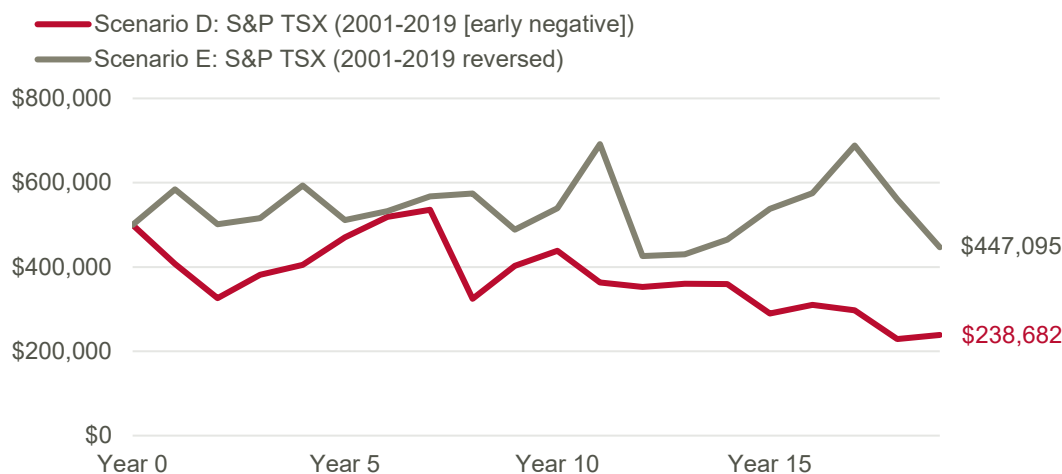
Although the scenarios above are useful for illustrating the concept of sequencing risk, they don't reflect real market data or the realities of how withdrawals may actually be made. This is why successful retirement planning needs to take into account many variables and is an important topic for advisors to plan and talk through with their clients. Outside of simple **sequencing risk**, there are many other factors at play once retirement comes into play - **longevity risk**, **market risk**, **inflation risk**, to name a few - all of which illustrate why there's a need to shift gears when investors enter the decumulation phase.

To dive deeper and provide a truer representation of sequencing risk at work, we've put together a hypothetical example based on some real-world factors. We're using actual market data, focusing on annual returns from the S&P TSX Composite Index from the beginning of the dot-com bubble crash (2001) to almost twenty years later (2019). This provides an example of actual data for an early negative return investor (Scenario D). We then reverse the order of returns to show the important of sequence and an example of an early positive return investor (Scenario E).

### Figure 4: annual withdrawals indexed to inflation

*An annual withdrawal of \$30,000 that is indexed to inflation (2% per year), assuming an initial investment of \$500,000.*

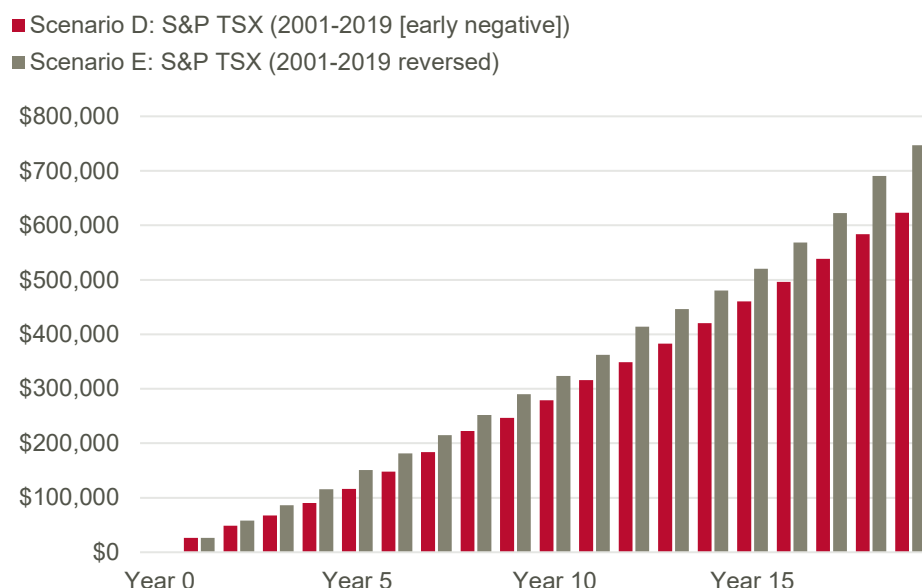
Although the two scenarios in Figure 4 have the same 4% annualized return over the 19-year period, it's easy to see that the **sequence of returns** plays a pivotal role in the longevity of the two portfolios. Scenario D, which started with the dot-com bubble and experienced early negative returns, has an ending market value that is roughly half that of Scenario E where the returns occurred in reverse order. If this data were to continue, it's likely that Scenario D would be depleted well in advance of Scenario E.



### Figure 5: minimum annual withdrawals on RRIF account

An annual withdrawal based on the 2020 minimum annual withdrawal rates for RRIFs<sup>1</sup>, assuming an initial investment of \$500,000 and withdrawal rates based on a starting age of 71 (withdrawal rate starts at 5.28% in year 1 and increases annually to 10.99% by year 19).

In the case of a RRIF, when withdrawals are based on a **percentage amount** as opposed to a dollar amount, the ending market values for the same two sequencing return scenarios are relatively similar (not illustrated, however ending market values would be \$399,286 for Scenario D and \$392,972 for Scenario E). However, this doesn't necessarily mean they're equal. The difference in this case lies in the total amount withdrawn over the time period. Scenario D withdraws \$124,290 less than Scenario E over the 19 years, which translates to 17% less income to the investor while the ending market values are essentially the same.



*In the real world, the sequence of returns plays a pivotal role in both the longevity of a portfolio and the amount of income investors can withdraw in retirement.*

These real-world examples show how essential it is to avoid large losses or at least mitigate risk early in the investment journey. But how do we go about doing this?

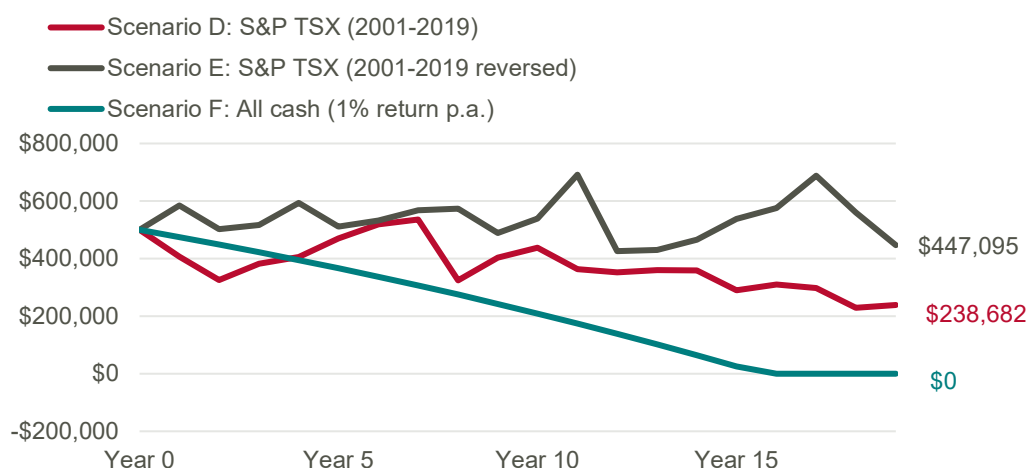
## How can sequencing risk be reduced?

Knowing that retirees are faced with sequencing risk, what can be done about it? Timing the markets may sound great in theory, but it's hard to put into practice unless you have a crystal ball. What other options do retirees have available to them?

<sup>1</sup> Original rates used (not the lower rates due to COVID-19 response plan)

### Figure 6: annual withdrawal with inflation, converted to cash

Controlling the effects of market volatility is one way to reduce sequencing risk. Retirees may think that they can reduce risk by moving all assets to cash or other similar low risk investments upon retirement. This strategy successfully removes sequencing risk; however, this risk is immediately replaced with a spike in **longevity risk**. This is shown in Figure 6, which adds to the real-world scenario we reviewed earlier (Figure 4). The all cash portfolio is completely depleted by year 16, while the two other scenarios that are still able to draw out an income at the end of the timeline. Therefore, moving all assets into lower-yielding cash-type assets creates an even greater risk that the investor will likely outlive their funds – so let's strike that one out.



### Figure 7 & 8: smoothing out the portfolio with downside protection

This is where the expertise of financial advisors come in. Working with their clients, advisors can either invest in funds or design portfolios that have downside protection, so clients capture **less of the downside** at the cost of **capturing less of the upside, too**. This essentially helps smooth out returns and reduces overall volatility. Some may think that with capturing less of the upside the investor will lose

*Investing in funds or designing portfolios that have downside protection can help significantly reduce both sequencing and longevity risk during retirement.*

#### Figure 7: 85% upside / 60% downside (2001-2019 [early negative])

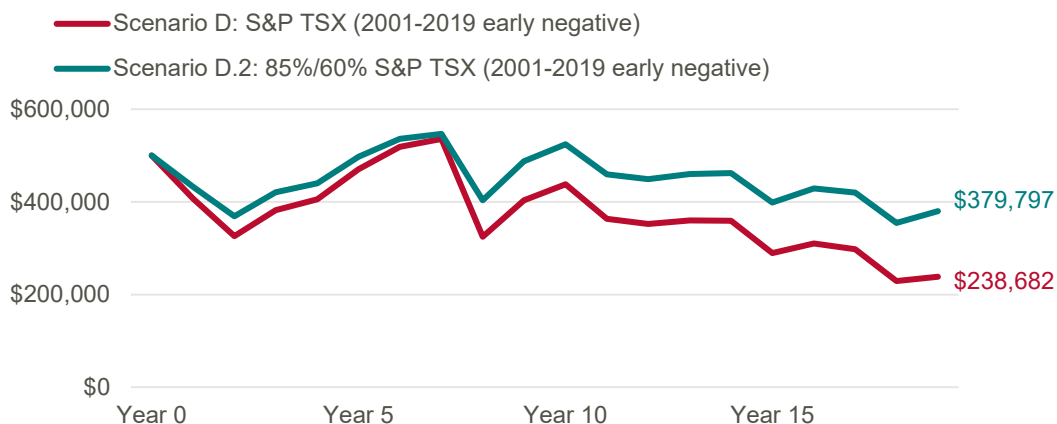
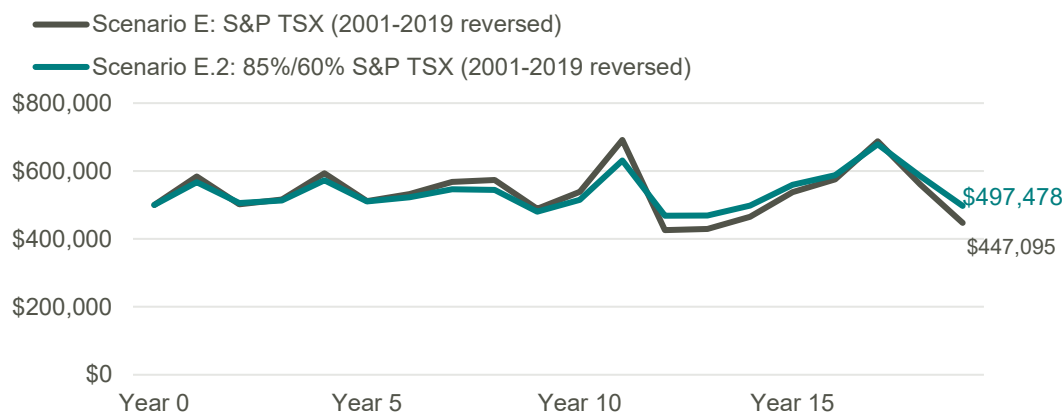


Figure 8: 85% upside / 60% downside (2001-2019 reversed)



out on opportunity for growth. However, in our example we can see in Figure 7 and 8 the benefit to retirees of investing in a fund that captures 85% of the upside when the market rises but only 60% of the downside when the market falls, compared to the real-world scenario reviewed earlier (Figure 4).

Scenario D.2, which represents the smoothed-out version of Scenario D (early negative returns), ends with a market value that is \$141,115 (59%) higher than the unsmoothed version. This benefit doesn't come at the cost of the upside either, as the smoothed version (Scenario E.2) of the early positive return (Scenario E) provides a higher ending value at the end of the investment period as well (increase of \$50,383, or 11%).

Based on the examples above, we can see that having to withdraw funds at 100% of the upside/downside dramatically changes the outcome for the investor compared to capturing less of the downside at a cost of some upside. This sounds great in theory, but how do we achieve this?

## Enter, Canada Life's Risk-Managed Portfolios

Canada Life™ has been supporting Canadians for more than 170 years. As a company rooted in insurance, managing risk has been at the core of what we do since the beginning. When it comes to our wealth business, we're no different.

With many baby boomer clients moving into the retirement stage of their investment life cycle, Canada Life recognizes there are market realities and uncertainties for these investors that demand different ways of constructing portfolios. Investors are looking for more predictability and control when investing to help achieve a smoother investment experience so they can protect their hard-earned savings, have enough money for retirement and still take advantage of opportunities for growth. This is where the new Canada Life Risk-Managed Portfolios can help.

Canada Life Risk-Managed Portfolios are specifically designed to help Canadians protect the savings they have worked hard for over many years by limiting the impacts of volatility and market drawdowns without sacrificing long-term growth to help achieve their goals. This is done by taking a unique view in managing risk – a multi-asset approach that uses a combination of active and passive strategies, as



well as non-traditional and alternative investment strategies, offering an all-in-one solution with the best strategies to effectively limit downside risk. The non-traditional strategy in the portfolios is specifically built for risk mitigation. This includes option collars and cash covered puts that aim to help provide significant protection to market downturns at a small cost to participation in market growth. Meanwhile, the alternative strategy combines multiple uncorrelated return streams, which offer greater diversification as their returns are not dependent on market returns. This leads to potentially higher returns with lower volatility.

These strategies, combined with the active and passive equity and fixed income components of the portfolios, aim to provide smoothed out returns. This in turn reduces sequencing risk to investors, so as they enter the retirement stage of life, they can prepare to enjoy the journey ahead.

For more information about each of the Canada Life Risk-Managed Portfolios visit the marketing toolkit.

*With Canada Life Risk-Managed Portfolios, clients can feel confident knowing that through good times and bad, they'll have an investment strategy that will help mitigate losses and are designed to stay within expected return ranges.*