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Investments

How the sequence of returns can impact your retirement savings

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1. Will your savings last through retirement?

For investors entering retirement, high portfolio returns are important, but they are only one factor influencing how long their savings will last. Another factor is the order or sequence of returns. There is a simple mathematical reason for this: regular withdrawals progressively diminish a portfolio's dollar value and that dollar value is the base on which future returns compound. When negative returns occur near the outset, the investor is left with a smaller base on which future positive returns can compound.

Over time that base continues to decline with each additional income withdrawal. This could result in retirement savings running out much sooner than if the portfolio experienced positive returns at the start of the withdrawal period.

2. Illustrative scenarios

The best way to illustrate this risk is to look at three different scenarios. Three retirees starting the withdrawal period with identical savings can have entirely different financial outcomes, depending on the sequence of their returns. The following hypothetical example presents these scenarios over a five-year period.

In Scenario 1, the sequence of returns goes from the most positive returns in the first year to the most negative in the final year.

Scenario 2 starts with the most negative returns and moves forward to the most positive. Finally, Scenario 3 earns a constant (average) return in each of the five years.

Each scenario follows a different path, but all end with a compounded total return of 27% and an average annualized rate of return of 5% over five years.

Year	Return Scenario 1 Early Positive Returns	Return Scenario 2 Early Negative Returns	Return Scenario 3 Constant Returns
1	15%	-7%	5%
2	13%	-5%	5%
3	11%	11%	5%
4	-5%	13%	5%
5	-7%	15%	5%
Total Return	27%	27%	27%
Average Annualized	5%	5%	5%

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i. The outcome if no withdrawals are made

The sequence of returns has no impact on the portfolio's final dollar value when no withdrawals (or additions) are made over the course of the five-year investment. As **Chart 1** illustrates, the ending value in all three scenarios is the same, even though each travels a different path to arrive there.

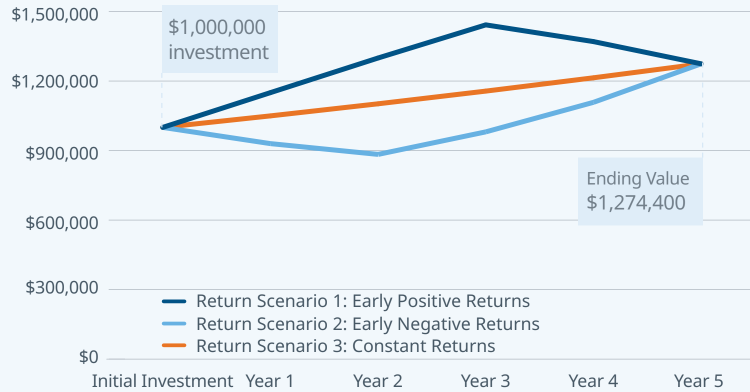
ii. What happens when withdrawals are made?

However, if income is withdrawn from the portfolio during the period, the end result for each scenario could be very different. The portfolio that experiences the negative returns at the beginning is not able to keep up with the portfolio that experiences the positive returns up front. This is because when the positive returns come later they compound on a smaller and declining base. The result is that the ending dollar value is lower than it is with the two other scenarios.

Chart 2 illustrates what happens when $5,000 is withdrawn every month (for a total of $60,000 a year). The longer the time period, the larger this divergence could become.

Chart 3 shows the same five-year sequence of returns repeated six times to create a 30-year period. Even though all three scenarios over this period would have earned an average annualized rate of return of 5%, the dollar value of each portfolio would continue to grow apart. Eventually, the portfolio in Scenario 2 (beginning with negative returns) would run out of money before the others. The portfolio in Scenario 1 (beginning with positive returns), on the other hand, would have ended with a dollar value of $763,747, and would have been able to continue paying income.

Chart 1 – No withdrawals



For illustrative purposes only

Chart 2 – Withdrawals

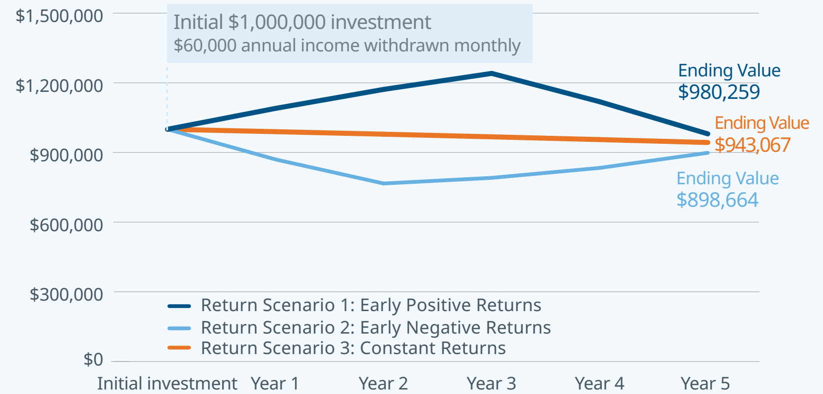


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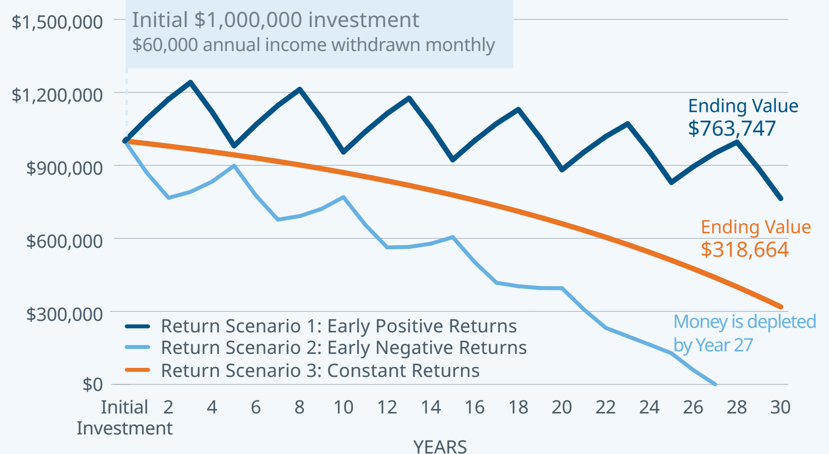
Chart 3 – Extended period of withdrawals



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3. Sequence of returns in the "real world"

It is very unlikely that two actual portfolios would perform as they did in the above scenarios, with one experiencing returns that move from high to low, and the other the exact opposite. Sequence-of-returns risk, however, can manifest itself in similar scenarios when a significant negative market event occurs near the beginning of an investment period.

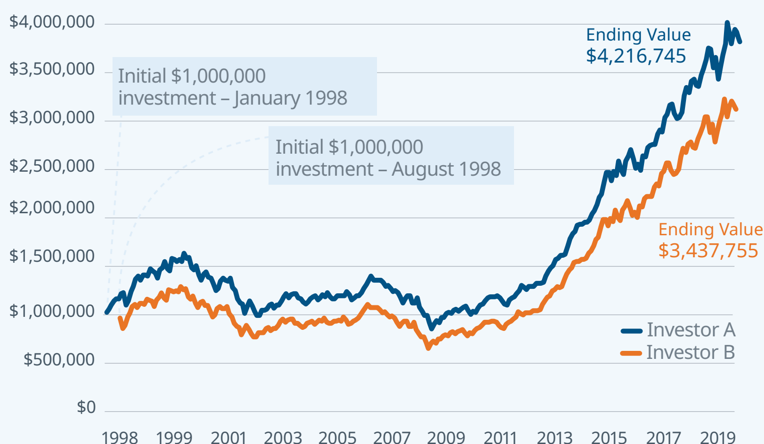
To illustrate, we've created a hypothetical example in **Chart 4** using actual market data.

Investor A entered the market on January 1, 1998. Investor B entered seven months later on August 1, 1998. In mid-August, the Russian financial crisis hit.

Although the investments were made only seven months apart, the outcomes after 20 years are nearly $778,990 apart. One portfolio obviously benefits from the initial positive performance before the Russian financial crisis caused a correction, while the other did not, making this more of a timing issue.

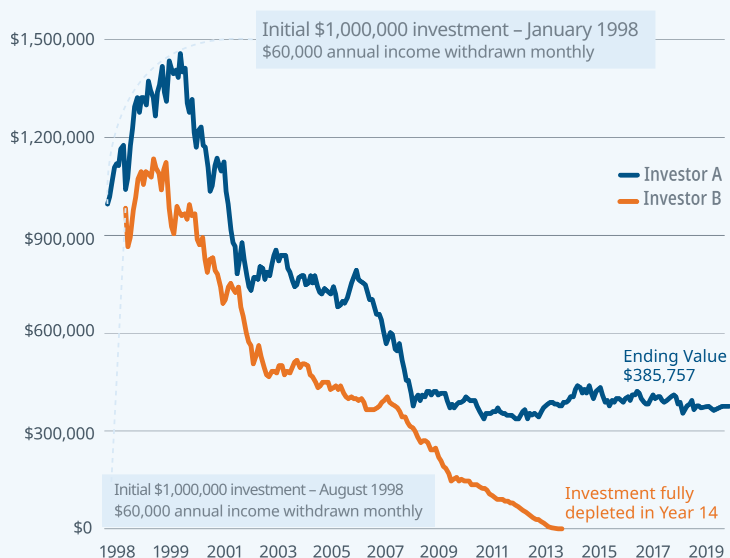
Sequence-of-returns risk, however, is magnified when regular monthly withdraws of $5,000 are made during the same return series. In **Chart 5**, the performance looks different because each portfolio's dollar value – its compounding base – is declining as withdrawals are made throughout the period.

Chart 4 – Sequence of returns risk



Source: Morningstar, based on S&P 500, to August 31, 2019. For illustrative purposes only.

Chart 5 – Sequence of returns risk with withdrawals



Source: Morningstar, based on S&P 500, to August 31, 2019. For illustrative purposes only.

4. Building a stable and sustainable income flow in retirement

Controlling the effects of market volatility on a portfolio could be one way to reduce sequence-of-returns risk. Retirees today may wish to consider moving beyond traditional asset classes or adding strategies, such as options, to help control volatility while enhancing yield.

A multi-asset class approach with built-in protection could be one solution. It diversifies across major asset classes, including Canadian and global sovereign bonds, global equities, broad commodities and real estate. Canadian and global sovereign bonds can provide high-quality income as well as diversification during volatile equity markets.

Equities and REITs add potential income and capital appreciation, while real return bonds and commodities offer a layer of inflation protection.

These asset classes could be complemented by the inclusion of an unconstrained fixed-income strategy, which is designed to deliver positive returns over a market cycle and provide an additional buffer against volatility.

Additionally, the inclusion of an option strategy designed to protect against the full extent of equity market downside risk could further buffer against volatility.

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Mackenzie Monthly Income Portfolios

Mackenzie Monthly Income Conservative Portfolio & Mackenzie Monthly Income Balanced Portfolio are globally-diversified, multi-asset solutions that can:

- Provide monthly income through yield and capital gains
- Help protect your money during market downturns
- Deliver some growth potential to offset longevity and inflation risks
- Offer professional management by a seasoned team with extensive asset allocation and risk management experience

Talk to your financial advisor

About how Mackenzie Monthly Income Portfolios can help manage sequence-of-returns risk.

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