

Volatility in perspective

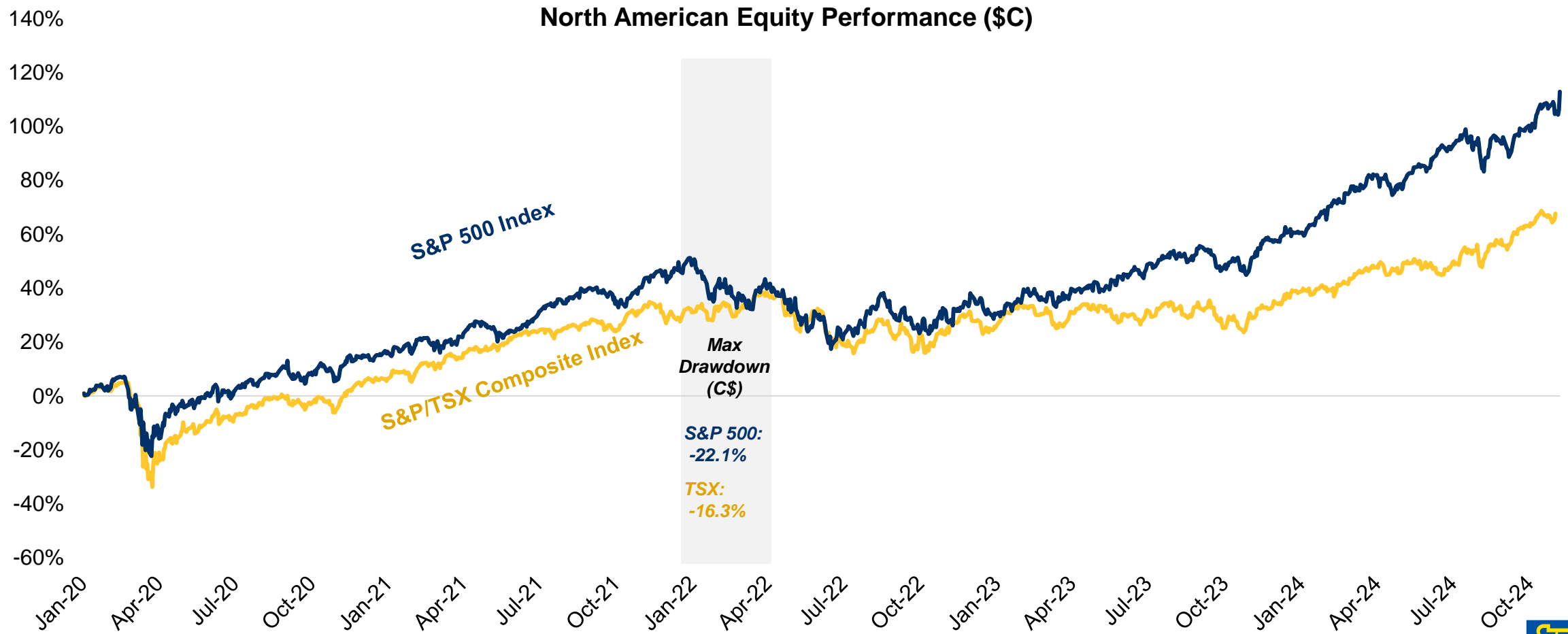
November 2024



Capital Markets

Equity markets

Stocks recording new highs in 2024



Source: Bloomberg, RBC GAM. As of November 6, 2024. U.S. Equities = S&P 500 Index and Canadian Equities = S&P/TSX Composite Index. Returns are in Canadian dollars and represent cumulative returns from December 31, 2019, including dividends. Drawdown for U.S. Equities from January 3, 2022 – June 16, 2022, Drawdown for Canadian Equities from April 4, 2022 – July 14, 2022.



Interest rates

Bond yields rebounding so far this year

U.S. 10 Year Bond Yield



Canada 10 Year Bond Yield



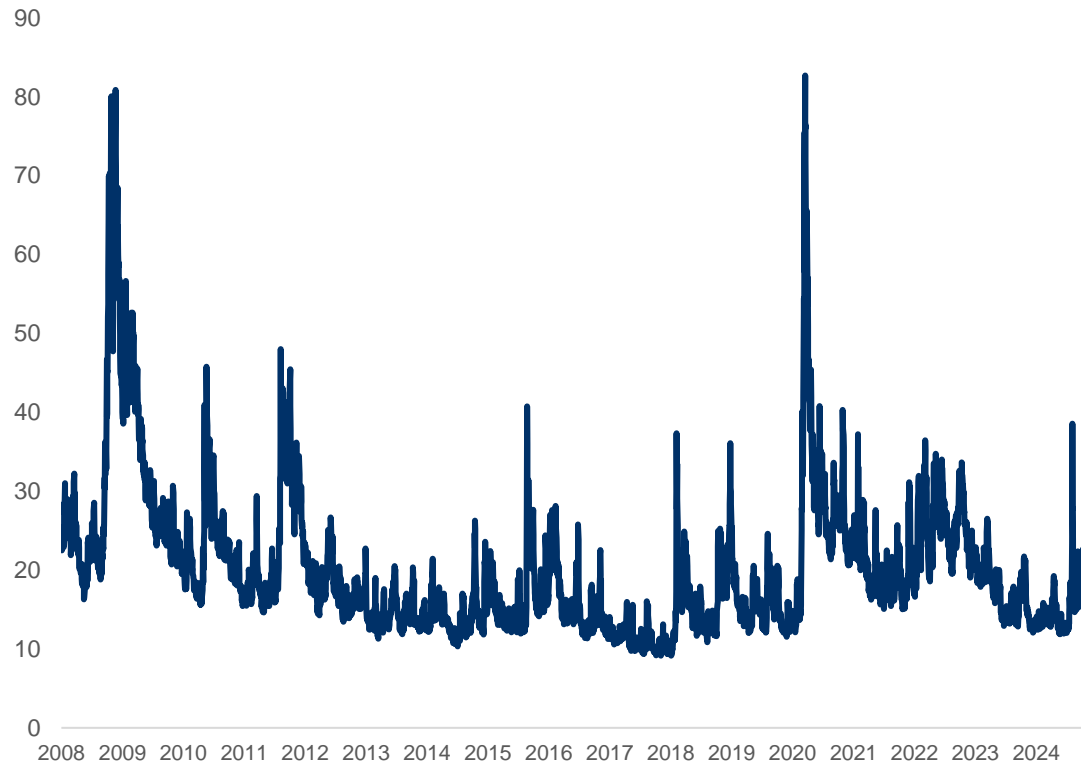
Source: Bloomberg, as of November 6, 2024.



Volatility indices

Volatility picking up in equity markets. Volatility relatively elevated in bond markets

Equity Market Volatility VIX Index



Bond Market Volatility MOVE Index



Source: Bloomberg, as of November 6, 2024. VIX Index measures expected volatility of the S&P 500 Index. MOVE Index is a measure of U.S. Treasury yield volatility.



Credit spreads

High yield bond spreads remain below long-term average

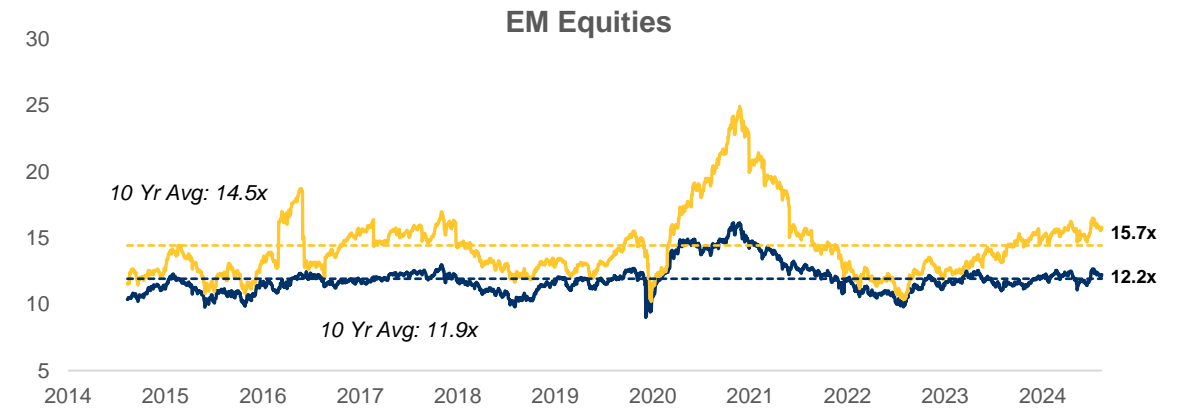
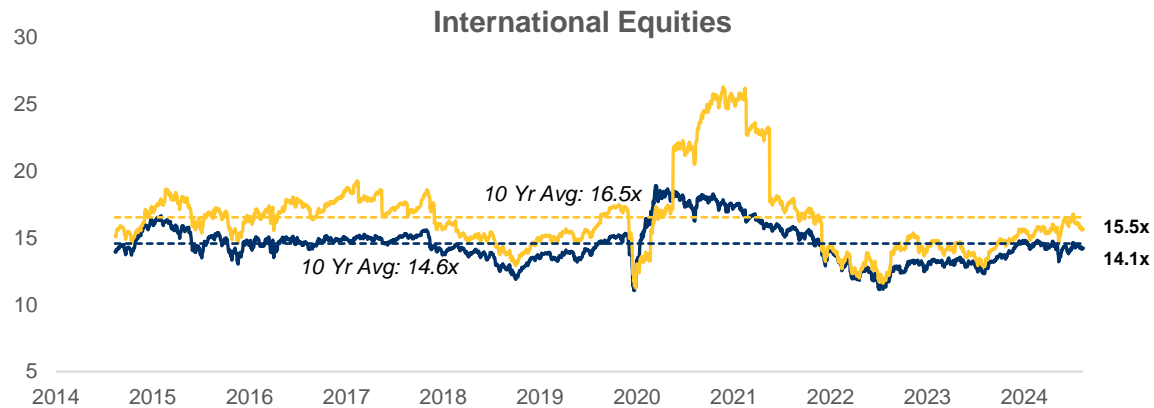
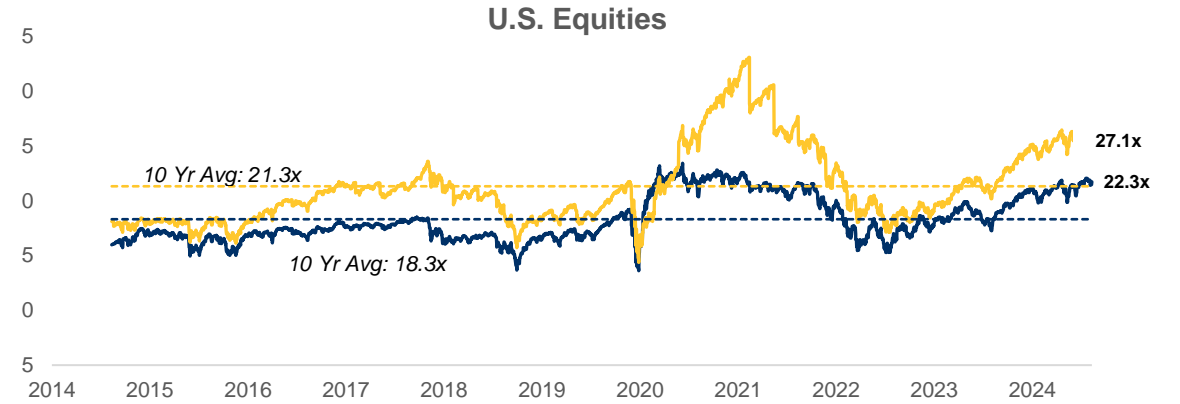
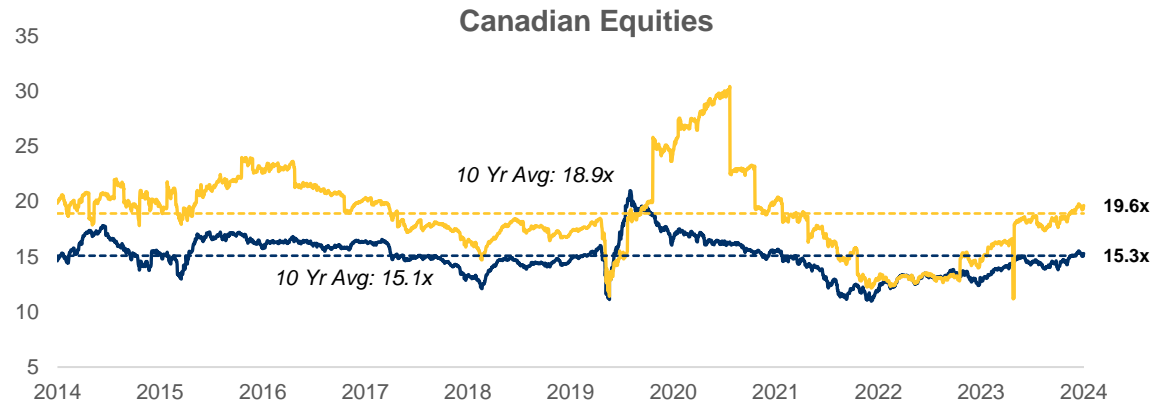


Source: RBC GAM, ICE BofA HY Master II Index. As of November 6, 2024



Equity market valuations

Valuations are more reasonable outside of the U.S.



Trailing P/E Ratio Forward P/E Ratio

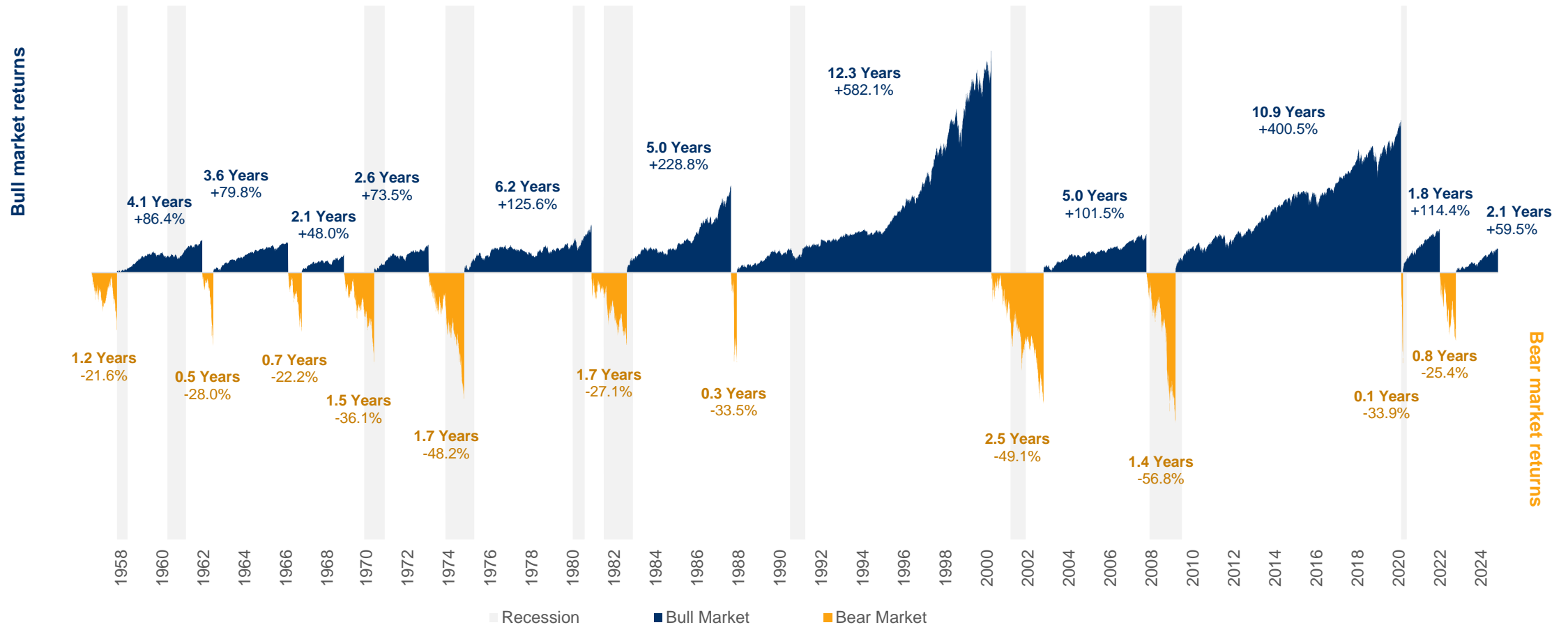
Source: Bloomberg, RBC GAM. Data as of November 6, 2024. Canadian Equities represented by S&P/TSX Index. U.S. Equities represented by S&P 500 Index. EM Equities represented by MSCI EM Index, EAFE Equities represented by MSCI EAFE Index.



Volatility in Perspective

History of U.S. bull & bear markets

1957 – 2024 YTD

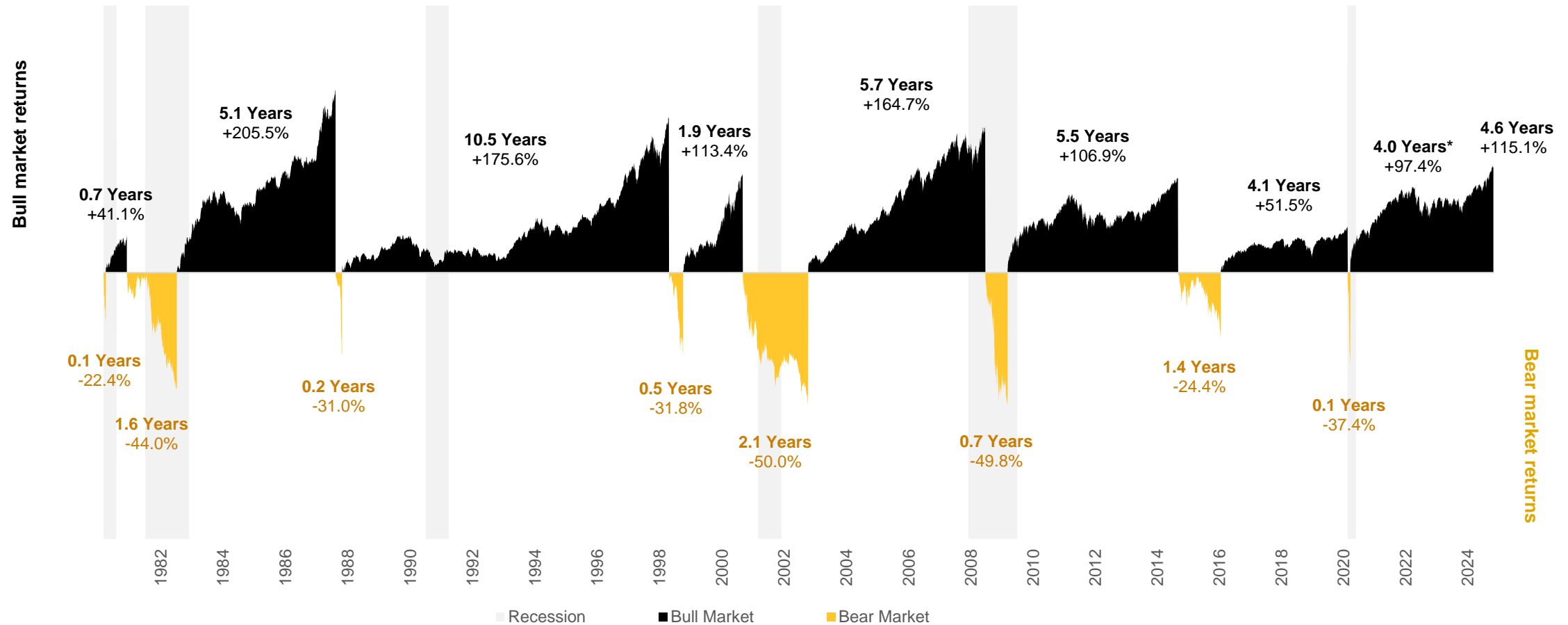


As of October 31, 2024. Reflects S&P 500 Index in USD. Source: RBC GAM, Bloomberg. An investment cannot be made directly into an index. The graph does not reflect transaction costs, investment management fees or taxes. If such costs and fees were reflected, returns would be lower. Past performance is not a guarantee of future results. Bull market starts from lowest close reached after market has fallen 20% of more. Bear market starts from when the index closes at least 20% down from its previous high.



History of Canadian bull & bear markets

1980 – 2024 YTD

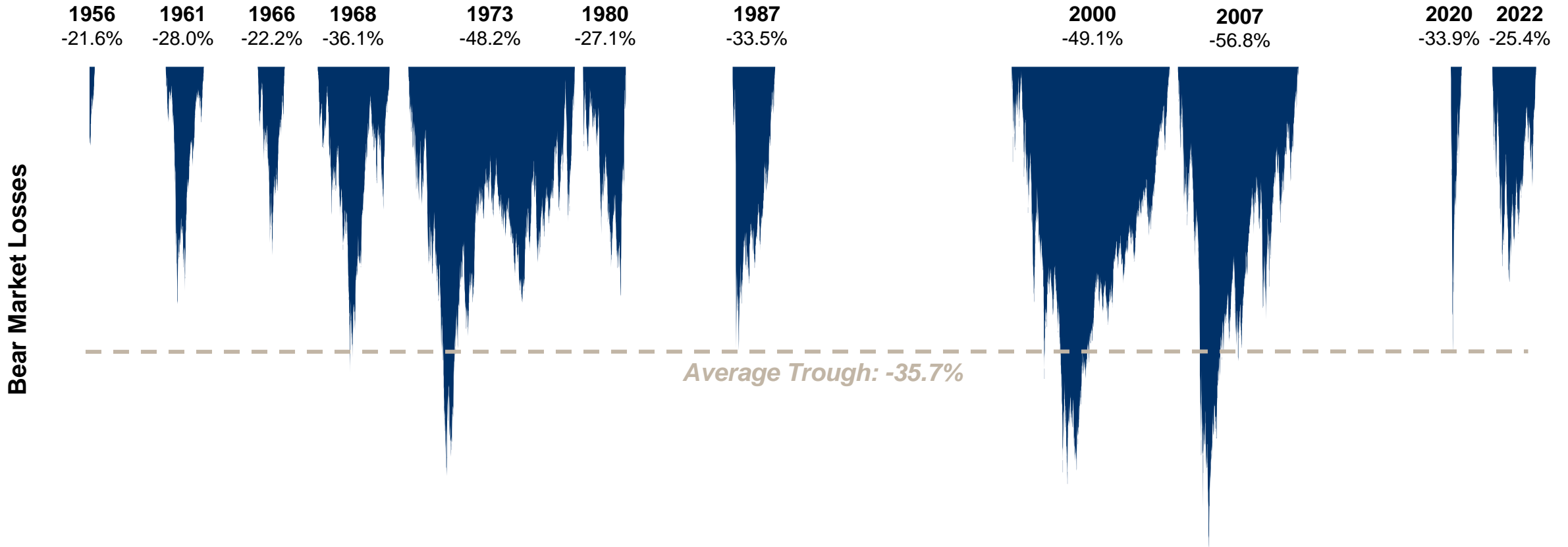


As of October 31, 2024. Reflects the S&P/TSX Composite Index in CAD. Source: RBC GAM, Bloomberg. An investment cannot be made directly into an index. The graph does not reflect transaction costs, investment management fees or taxes. If such costs and fees were reflected, returns would be lower. Past performance is not a guarantee of future results. Bull market starts from lowest close reached after market has fallen 20% of more. Bear market starts from when the index closes at least 20% down from its previous high.



Bear markets: more common than they appear

S&P 500 Index



As of October 31, 2024. Source: RBC GAM, Bloomberg. Graph reflects the price index, return figures include dividends. An investment cannot be made directly into an index. The graph does not reflect transaction costs, investment management fees or taxes. If such costs and fees were reflected, returns would be lower. Past performance is not a guarantee of future results. Date reflects year drawdown troughed. Reflects S&P 500 performance in USD.

Bear markets: more common than they appear

S&P/TSX Composite Index

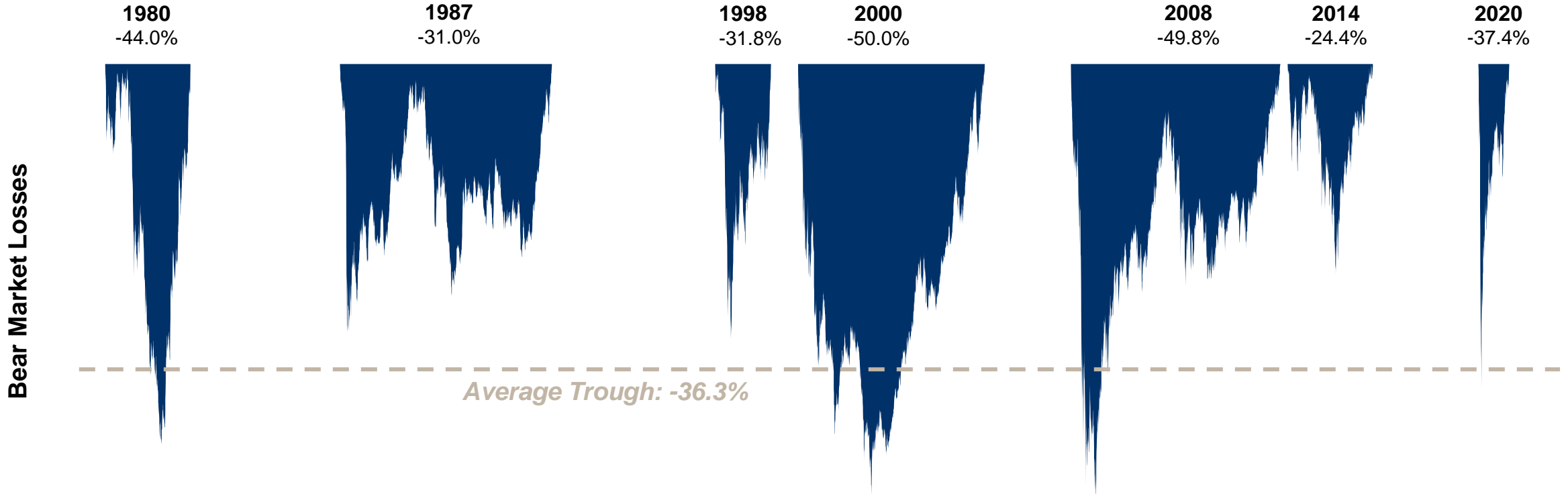


Chart data as of October 31, 2024. Source: RBC GAM, Bloomberg. Graph reflects the price index, return figures include dividends. An investment cannot be made directly into an index. The graph does not reflect transaction costs, investment management fees or taxes. If such costs and fees were reflected, returns would be lower. Past performance is not a guarantee of future results. Date reflects year drawdown troughed. Reflects S&P/TSX Composite Index performance in CAD.

Volatility is a normal part of investing

On average, U.S. equities experience negative monthly returns 4 times a year

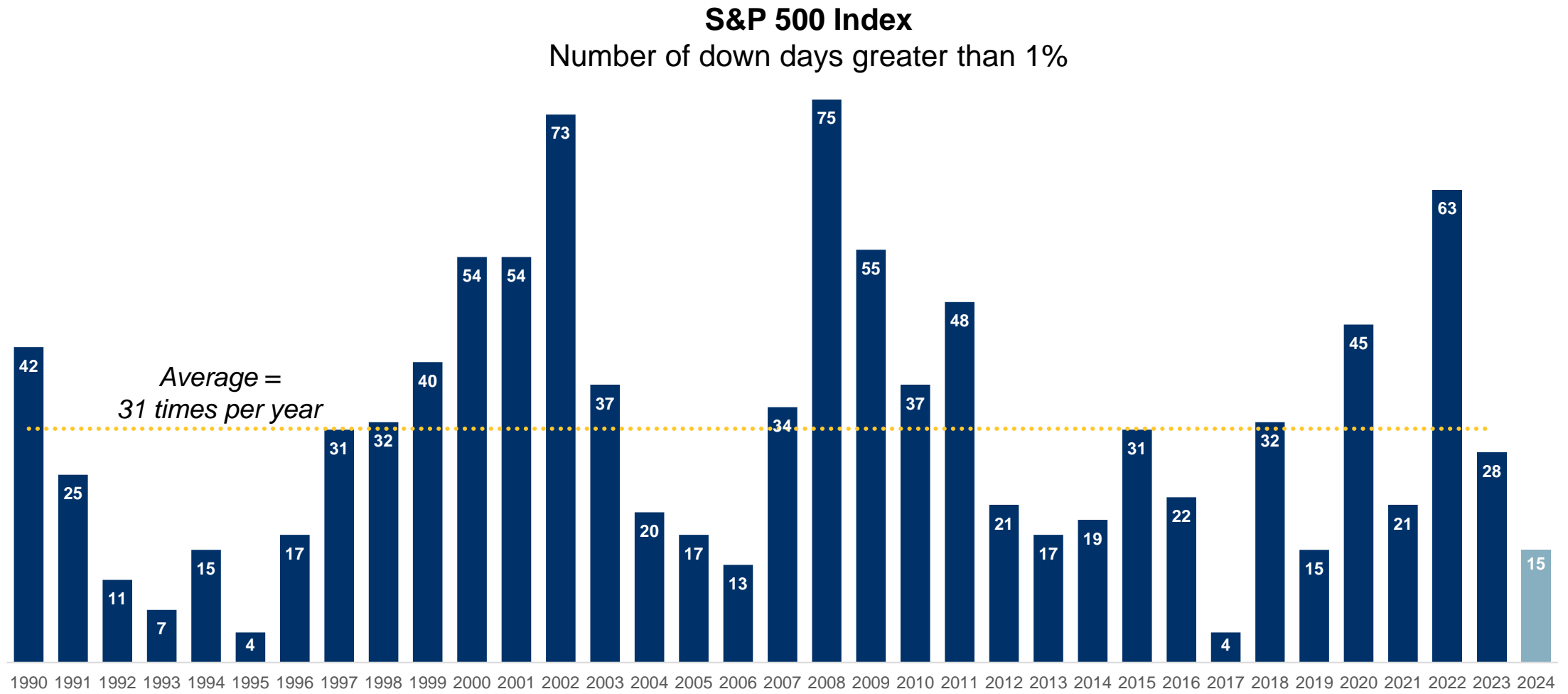
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2024	1.68%	5.34%	3.22%	-4.08%	4.96%	3.59%	1.22%	2.43%	2.14%	-0.92%		
2023	6.30%	-2.40%	3.70%	1.60%	0.40%	6.60%	3.20%	-1.60%	-4.80%	-2.10%	9.10%	4.50%
2022	-5.20%	-3.00%	3.70%	-8.70%	0.20%	-8.30%	9.20%	-4.10%	-9.20%	8.90%	5.60%	-5.80%
2021	-1.00%	2.80%	4.40%	5.30%	0.70%	2.30%	2.40%	3.00%	-4.70%	7.00%	-0.70%	4.50%
2020	0.00%	-8.20%	-12.40%	12.80%	4.80%	2.00%	5.60%	7.20%	-3.80%	-2.70%	10.90%	3.80%
2019	8.00%	3.20%	1.90%	4.00%	-6.40%	7.00%	1.40%	-1.60%	1.90%	2.20%	3.60%	3.00%
2018	5.70%	-3.70%	-2.50%	0.40%	2.40%	0.60%	3.70%	3.30%	0.60%	-6.80%	2.00%	-9.00%
2017	1.90%	4.00%	0.10%	1.00%	1.40%	0.60%	2.10%	0.30%	2.10%	2.30%	3.10%	1.10%
2016	-5.00%	-0.10%	6.80%	0.40%	1.80%	0.30%	3.70%	0.10%	0.00%	-1.80%	3.70%	2.00%
2015	-3.00%	5.80%	-1.60%	1.00%	1.30%	-1.90%	2.10%	-6.00%	-2.50%	8.40%	0.30%	-1.60%
2014	-3.50%	4.60%	0.80%	0.70%	2.40%	2.10%	-1.40%	4.00%	-1.40%	2.40%	2.70%	-0.30%
2013	5.20%	1.40%	3.80%	1.90%	2.30%	-1.30%	5.10%	-2.90%	3.10%	4.60%	3.10%	2.50%
2012	4.50%	4.30%	3.30%	-0.60%	-6.00%	4.10%	1.40%	2.30%	2.60%	-1.90%	0.60%	0.90%
2011	2.40%	3.40%	0.00%	3.00%	-1.10%	-1.70%	-2.00%	-5.40%	-7.00%	10.90%	-0.20%	1.00%
2010	-3.60%	3.10%	6.00%	1.60%	-8.00%	-5.20%	7.00%	-4.50%	8.90%	3.80%	0.00%	6.70%
2009	-8.40%	-10.70%	8.80%	9.60%	5.60%	0.20%	7.60%	3.60%	3.70%	-1.90%	6.00%	1.90%
2008	-6.00%	-3.30%	-0.40%	4.90%	1.30%	-8.40%	-0.80%	1.50%	-8.90%	-16.80%	-7.20%	1.10%
2007	1.50%	-2.00%	1.10%	4.40%	3.50%	-1.70%	-3.10%	1.50%	3.70%	1.60%	-4.20%	-0.70%
2006	2.70%	0.30%	1.20%	1.30%	-2.90%	0.10%	0.60%	2.40%	2.60%	3.30%	1.90%	1.40%
2005	-2.40%	2.10%	-1.80%	-1.90%	3.20%	0.10%	3.70%	-0.90%	0.80%	-1.70%	3.80%	0.00%
2004	1.80%	1.40%	-1.50%	-1.60%	1.40%	1.90%	-3.30%	0.40%	1.10%	1.50%	4.10%	3.40%
2003	-2.60%	-1.50%	1.00%	8.20%	5.30%	1.30%	1.80%	2.00%	-1.10%	5.70%	0.90%	5.20%
2002	-1.50%	-1.90%	3.80%	-6.10%	-0.70%	-7.10%	-7.80%	0.70%	-10.90%	8.80%	5.90%	-5.90%
2001	3.60%	-9.10%	-6.30%	7.80%	0.70%	-2.40%	-1.00%	-6.30%	-8.10%	1.90%	7.70%	0.90%
2000	-5.00%	-1.90%	9.80%	-3.00%	-2.10%	2.50%	-1.60%	6.20%	-5.30%	-0.40%	-7.90%	0.50%
1999	4.20%	-3.10%	4.00%	3.90%	-2.40%	5.60%	-3.10%	-0.50%	-2.70%	6.30%	2.00%	5.90%
1998	1.10%	7.20%	5.10%	1.00%	-1.70%	4.10%	-1.10%	-14.50%	6.40%	8.10%	6.10%	5.80%
1997	6.30%	0.80%	-4.10%	6.00%	6.10%	4.50%	8.00%	-5.60%	5.50%	-3.30%	4.60%	1.70%
1996	3.40%	0.90%	1.00%	1.50%	2.60%	0.40%	-4.40%	2.10%	5.60%	2.80%	7.60%	-2.00%
1995	2.60%	3.90%	3.00%	2.90%	4.00%	2.30%	3.30%	0.30%	4.20%	-0.40%	4.40%	1.90%
1994	3.40%	-2.70%	-4.40%	1.30%	1.60%	-2.50%	3.30%	4.10%	-2.50%	2.30%	-3.60%	1.50%
1993	0.80%	1.40%	2.10%	-2.40%	2.70%	0.30%	-0.40%	3.80%	-0.80%	2.10%	-1.00%	1.20%
1992	-1.90%	1.30%	-1.90%	2.90%	0.50%	-1.50%	4.10%	-2.10%	1.20%	0.40%	3.40%	1.20%
1991	4.40%	7.20%	2.40%	0.20%	4.30%	-4.60%	4.70%	2.40%	-1.70%	1.30%	-4.00%	11.40%
1990	-6.70%	1.30%	2.70%	-2.50%	9.80%	-0.70%	-0.30%	-9.00%	-4.90%	-0.40%	6.50%	2.80%
1989	7.30%	-2.50%	2.30%	5.20%	4.10%	-0.60%	9.00%	2.00%	-0.40%	-2.30%	2.00%	2.40%
1988	4.20%	4.70%	-3.10%	1.10%	0.90%	4.60%	-0.40%	-3.40%	4.30%	2.80%	-1.40%	1.70%
1987	13.50%	4.00%	2.90%	-0.90%	0.90%	5.10%	5.10%	3.70%	-2.20%	-21.50%	-8.20%	7.60%

Source: RBC GAM, Morningstar & Bloomberg as of October 31, 2024. Monthly Returns in the S&P 500 (USD) Index since January 1990. "U.S. equities" refers to the S&P 500 Index.



Volatility is a normal part of investing

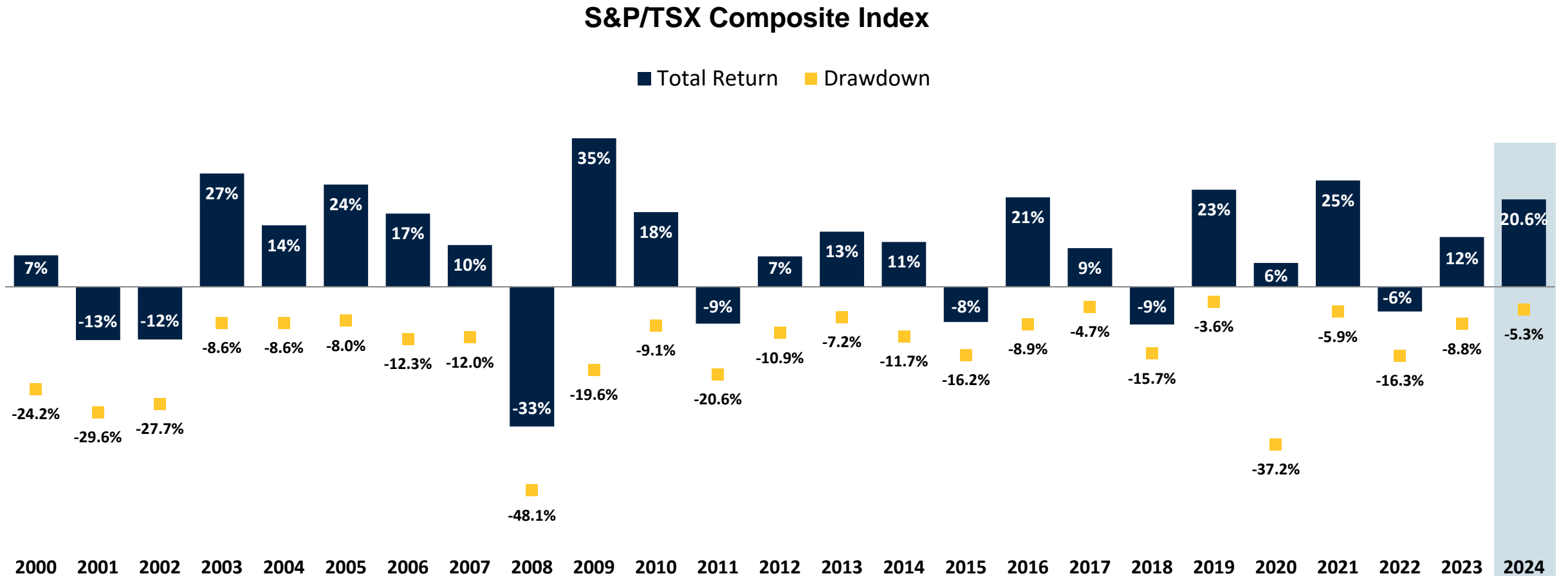
On average, there are approximately 31 days each year that the market declines by more than 1%



Source: RBC Global Asset Management, Bloomberg. Based on S&P 500 Index in U.S. dollars data as of November 6, 2024. An investment cannot be made directly into an index. The graph does not reflect transaction costs, investment management fees or taxes. If such costs and fees were reflected, returns would be lower. Past performance is not a guarantee of future results.

The S&P/TSX has experienced a drawdown of -8.8% in 2023

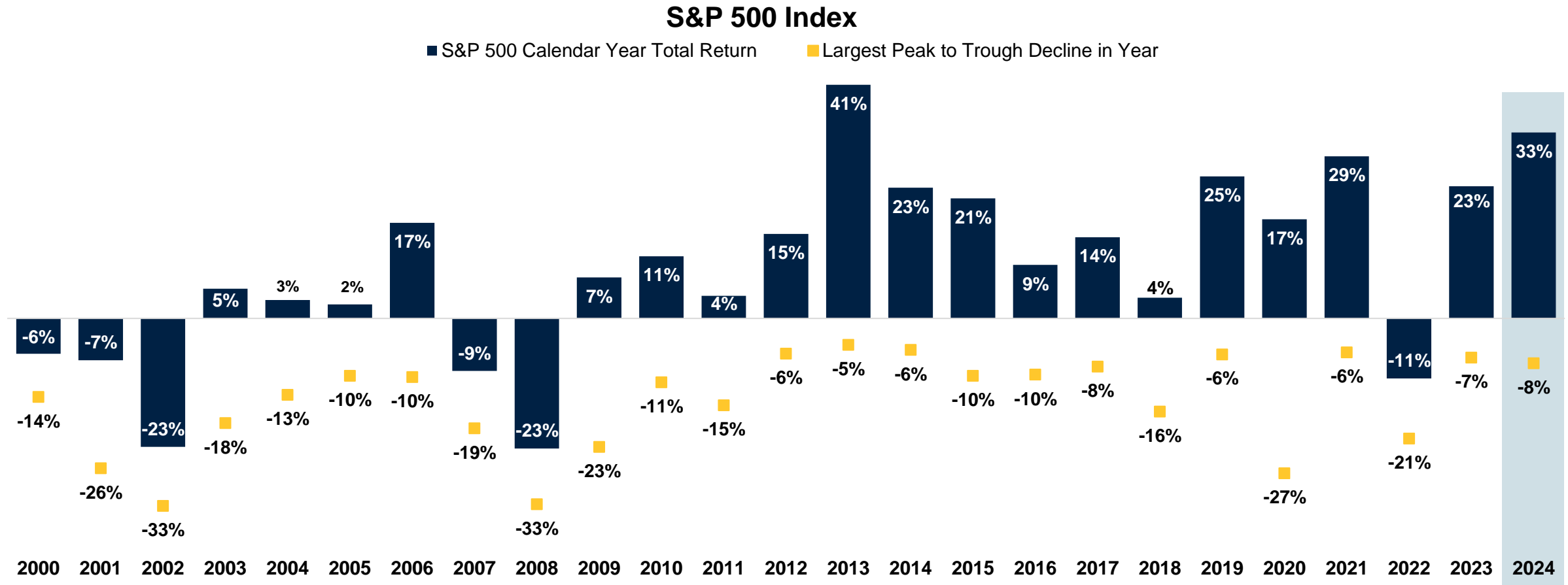
The average annual drawdown since 2000 is -15.6%



Source: Morningstar. Performance reflective of S&P/TSX Composite Index, denoted in Canadian dollars as of November 6, 2024. An investment cannot be made directly into an index. The graph does not reflect transaction costs, investment management fees or taxes. If such costs and fees were reflected, returns would be lower. Past performance is not a guarantee of future results. The peak is measured at the highest level of the index during the year and the trough is its lowest level following the peak.

The S&P 500 (C\$) experienced a drawdown of -6.9% in 2023

The average annual drawdown since 2000 is -14.8%



Source: Morningstar. Performance reflective of S&P 500 Index, denoted in Canadian dollars as of November 6, 2024. An investment cannot be made directly into an index. The graph does not reflect transaction costs, investment management fees or taxes. If such costs and fees were reflected, returns would be lower. Past performance is not a guarantee of future results. The peak is measured at the highest level of the index during the year and the trough is its lowest level following the peak.

Performance After Market Pullbacks

What could the path forward look like?

The average 12 month S&P 500 return after a bear market is +17.0%

Year	Peak Date	-20% Date	1Y	3Y	5Y	10Y
1961	Dec 12, 1961	May 28, 1962	30.73%	20.62%	14.05%	10.72%
1966	Feb 09, 1966	Aug 29, 1966	28.98%	12.15%	9.81%	6.83%
1968	Nov 29, 1968	Jan 29, 1970	16.48%	14.27%	1.43%	7.22%
1973	Jan 11, 1973	Nov 27, 1973	-23.74%	6.93%	4.66%	11.01%
1980	Nov 28, 1980	Feb 22, 1982	37.99%	23.02%	26.15%	18.51%
1987	Aug 25, 1987	Oct 19, 1987	27.82%	15.65%	16.96%	18.87%
2000	Mar 24, 2000	Mar 12, 2001	0.11%	-0.11%	3.39%	2.95%
2007	Oct 09, 2007	Jul 09, 2008	-27.15%	4.90%	8.21%	10.72%
2020	Feb 19, 2020	Mar 12, 2020	61.75%	17.76%		
Average			17.00%	12.80%	10.58%	10.85%
Median			27.82%	14.27%	9.01%	10.72%

Historically, investing during bear markets has rewarded investors, particularly over the long-term

Source: RBC GAM, Bloomberg. As of October 31, 2024. Analyzing S&P 500 Index returns following bear markets (20% declines) between 1960 and 2023. The 2020 bear market was not included in the 5Y or 10Y average/median calculation given timeframe has not transpired as of yet. An investment cannot be made directly into an index. The graph does not reflect transaction costs, investment management fees or taxes. If such costs and fees were reflected, returns would be lower. Past performance is not a guarantee of future results. Returns greater than one year are annualized.



What could the path forward look like?

The average 12 month S&P/TSX return after a bear market is +11.7%

Year	Peak Date	-20% Date	1Y	3Y	5Y	10Y
1980	Feb 29, 1980	Mar 27, 1980	37.07%	7.63%	8.84%	8.00%
1980	Nov 28, 1980	Sep 24, 1981	-13.69%	7.70%	9.73%	6.00%
1987	Aug 13, 1987	Oct 19, 1987	5.67%	-1.17%	0.17%	9.30%
1998	Apr 22, 1998	Aug 24, 1998	16.58%	8.41%	5.27%	9.97%
2000	Sep 01, 2000	Nov 16, 2000	-17.16%	-3.09%	5.44%	5.79%
2008	Jun 18, 2008	Sep 17, 2008	0.62%	4.11%	4.64%	6.18%
2014	Sep 03, 2014	Jan 07, 2016	28.17%	8.37%	11.03%	
2020	Feb 20, 2020	Mar 11, 2020	36.41%	14.95%		
Average			11.71%	5.86%	6.45%	7.54%
Median			11.12%	7.67%	5.44%	7.09%

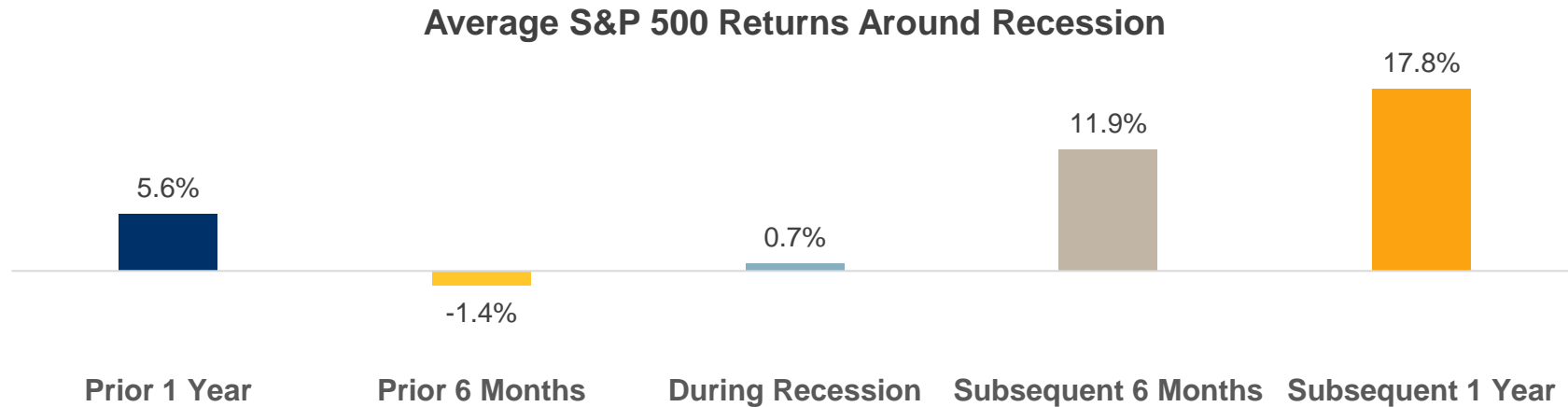
Historically, investing during bear markets has rewarded investors, particularly over the long-term

Source: RBC GAM, Bloomberg. As of October 31, 2024. Analyzing S&P/TSX Composite Index returns following bear markets (20% declines) between 1980 and 2022. The 2014 bear market was not included in the 10Y average/median calculation and the 2020 bear market was not included in the 3Y, 5Y or 10Y average/median calculation given timeframes have not transpired. An investment cannot be made directly into an index. The graph does not reflect transaction costs, investment management fees or taxes. If such costs and fees were reflected, returns would be lower. Past performance is not a guarantee of future results. Returns greater than one year are annualized.



Equity returns around recession

The market has rallied significantly in economic recovery



<i>Recession</i>		<i>Market Performance - S&P 500</i>				
<i>Start</i>	<i>End</i>	<i>Prior 1 Year</i>	<i>Prior 6 Months</i>	<i>During Recession</i>	<i>Subsequent 6 Months</i>	<i>Subsequent 1 Year</i>
10/23/1957	4/30/1958	-8.2%	-8.9%	8.8%	20.3%	37.2%
4/1/1960	2/28/1961	2.9%	-1.0%	17.5%	8.3%	13.6%
12/1/1969	11/30/1970	-11.2%	-8.4%	-2.3%	15.7%	11.2%
11/1/1973	3/31/1975	-1.5%	2.2%	-12.8%	1.6%	28.3%
1/2/1980	7/31/1980	15.5%	6.6%	18.8%	9.1%	13.0%
7/1/1981	11/30/1982	18.6%	-2.0%	10.9%	21.0%	25.6%
7/2/1990	3/28/1991	17.0%	1.7%	7.1%	4.5%	10.9%
3/1/2001	11/30/2001	-9.0%	-17.9%	-7.3%	-5.9%	-16.5%
12/3/2007	6/30/2009	7.5%	-3.2%	-24.0%	23.8%	14.4%
2/19/2020	5/29/2020	24.2%	16.9%	-9.6%	20.5%	40.3%

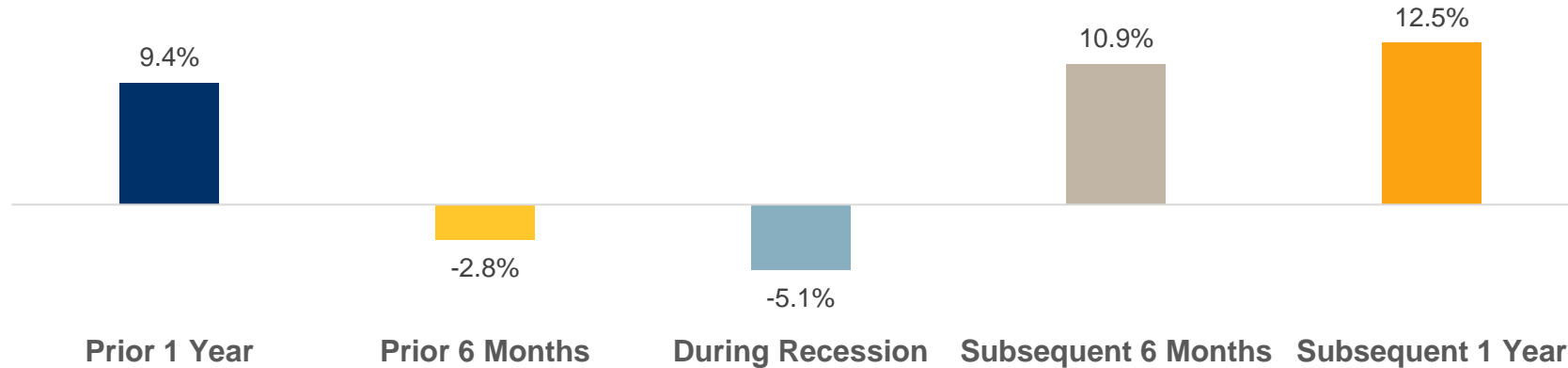
Source: RBC GAM, Bloomberg. As of October 31, 2024. S&P 500 returns in USD. An investment cannot be made directly into an index. The graph does not reflect transaction costs, investment management fees or taxes. If such costs and fees were reflected, returns would be lower. Past performance is not a guarantee of future results. Returns greater than one year are annualized.



Equity returns around recession

The market has rallied significantly in economic recovery

Average S&P/TSX Composite Index Returns Around Recession



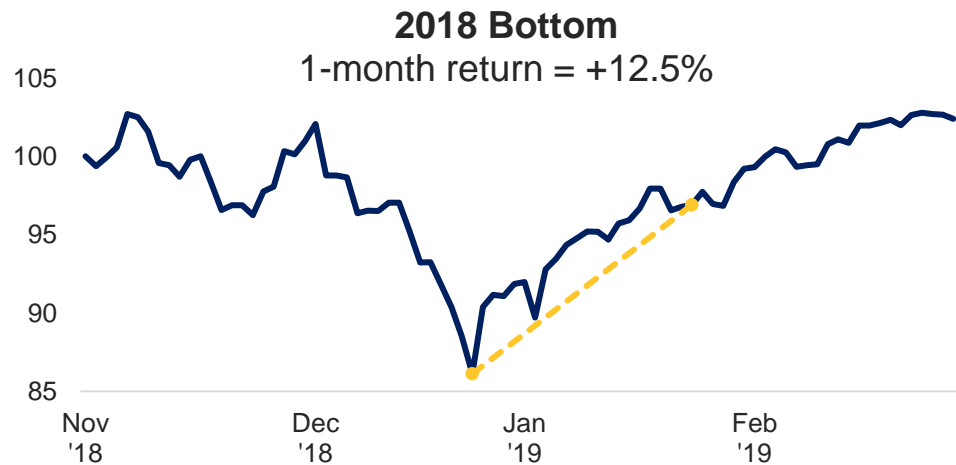
Recession		Market Performance - TSX				
Start	End	Prior 1 Year	Prior 6 Months	During Recession	Subsequent 6 Months	Subsequent 1 Year
1/2/1980	7/31/1980	37.3%	11.6%	21.7%	1.3%	2.6%
7/1/1981	11/30/1982	14.5%	4.1%	-16.2%	33.5%	38.2%
7/2/1990	3/28/1991	-5.8%	-11.5%	-1.4%	-3.3%	-2.3%
3/1/2001	11/30/2001	-12.9%	-28.4%	-7.3%	2.9%	-10.0%
12/3/2007	6/30/2009	9.7%	-2.1%	-13.2%	14.5%	11.9%
2/19/2020	5/29/2020	16.1%	11.6%	-14.3%	16.3%	34.7%

Source: RBC GAM, Bloomberg. As of October 31, 2024. S&P/TSX Composite Index returns in CAD. An investment cannot be made directly into an index. The graph does not reflect transaction costs, investment management fees or taxes. If such costs and fees were reflected, returns would be lower. Past performance is not a guarantee of future results. Returns greater than one year are annualized.



Rock bottom... or a spring board?

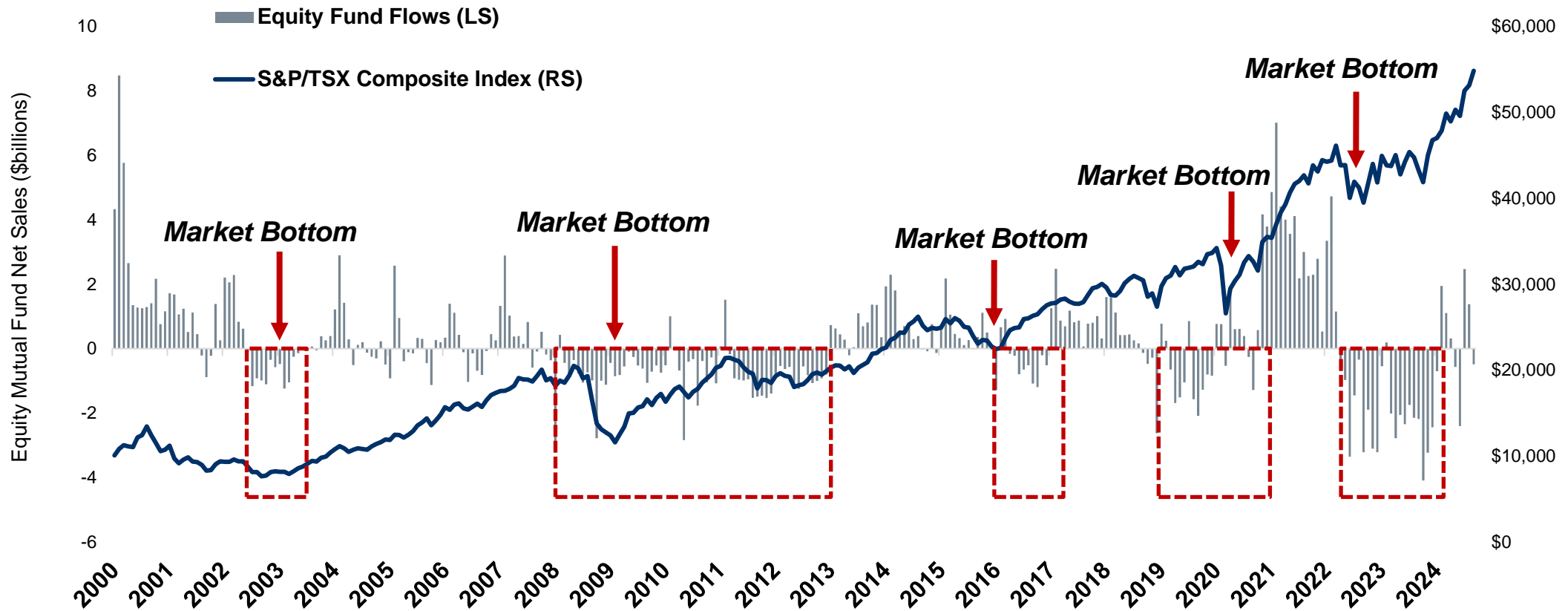
When stocks hit their bottom, they rebound swiftly



Source: Morningstar, RBC GAM. S&P 500 Total Return Index USD. This graph does not reflect transaction costs, investment management fees or taxes. If such costs and fees were reflected, returns would be lower. An investment cannot be made directly into an index.



Investors typically redeem at the worst times



S&P/TSX Composite Index Growth (Base = 10,000)

*Includes net equity mutual fund flows. Source: RBC GAM, IFIC, Bloomberg. As of January 1, 2000 – September 30, 2024. An investment cannot be made directly into an index. The graph does not reflect transaction costs, investment management fees or taxes. If such costs and fees were reflected, returns would be lower. Past performance is not a guarantee of future results.



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