MAZing Trading & Forecasting
RESEARCH

By **Michael A. Zingale**
Founder, MAZing

S&P 500 INDEX · PRICE · 1980 TO 2025

The Annual Range

Since 1980, the S&P 500 has fallen 19% or more inside a calendar year 11 times. On average it dropped 28% from its high close, then climbed 46% from the low by the following year-end. Measured from the high, the net result was +4%. The year-end numbers hide most of the move.

11	−28%	+46%	15×
Years since 1980 with a 19%+ decline inside the year	Average decline, high close to low close	Average gain, low close to the next year-end	Ground covered vs. net change, high to next year-end

The idea in one line. In a down-19% year, the market covers far more ground than any year-end return shows, first down and then back up. A portfolio that can only be long has to ride both legs.

DATA

S&P 500 price index daily closes, 1980 to 2025. Each year's decline runs from its highest close to the lowest close that followed in the same year.

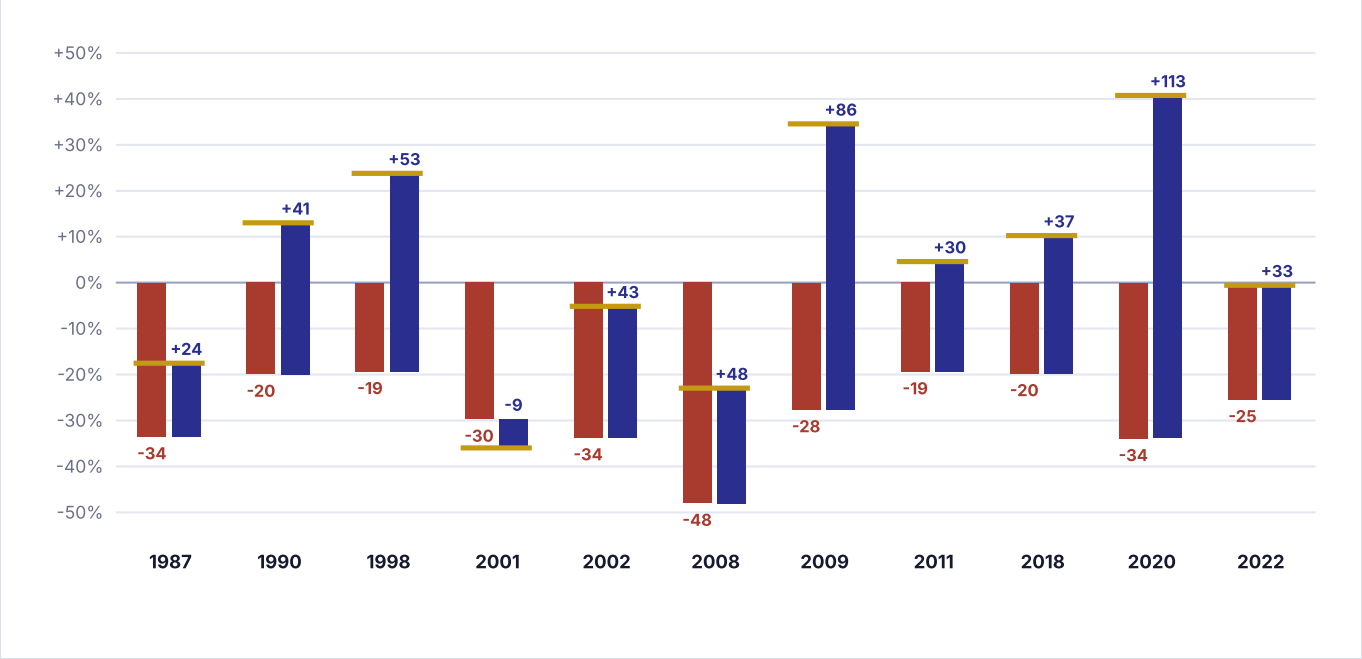
INSIDE

Part I: the decline, the recovery and what a year-end number hides. Part II: whole dollars vs. discounted dollars.

For education only. Not investment advice.

01 11 YEARS, 1987 TO 2022 Down 19% or more, then back

Each pair of bars is one year. The red bar is the fall from the year's high close to its low close. The blue bar is the move from that low to the next year-end. The gold line marks where the index finished, measured from the high.



High close to low close (%) · Low close to next year-end (% gain from the low) · Net: high close to next year-end

The recovery came fast

In 10 of 11 years the index was higher at the next year-end than at the low. The average hold from the low to that year-end was about 16 months.

The exception

2001 kept falling. The low close on September 21, 2001 was not the bottom, and 2002 ended 8.9% below it. A decline can always go further.

YEAR BY YEAR

02 What a year-end number hides

A statement shows the calendar-year return. The swing inside it is much larger. "Ground covered" adds the decline and the move back from the low, both as a share of the high close.

Year	High date	Low date	High to low	Low to next YE	High to next YE	Next-year return	Ground covered
1987	Aug 25	Dec 4	**−33.5%**	**+24.0%**	−17.5%	+12.4%	**49%**
1990	Jul 16	Oct 11	**−19.9%**	**+41.2%**	+13.0%	+26.3%	**53%**
1998	Jul 17	Aug 31	**−19.3%**	**+53.5%**	+23.8%	+19.5%	**62%**
2001	Jan 30	Sep 21	**−29.7%**	**−8.9%**	−36.0%	−23.4%	**36%**
2002	Jan 4	Oct 9	**−33.8%**	**+43.1%**	−5.2%	+26.4%	**62%**
2008	Jan 2	Nov 20	**−48.0%**	**+48.2%**	−22.9%	+23.5%	**73%**
2009	Jan 6	Mar 9	**−27.6%**	**+85.9%**	+34.6%	+12.8%	**90%**
2011	Apr 29	Oct 3	**−19.4%**	**+29.7%**	+4.6%	+13.4%	**43%**
2018	Sep 20	Dec 24	**−19.8%**	**+37.4%**	+10.2%	+28.9%	**50%**
2020	Feb 19	Mar 23	**−33.9%**	**+113.0%**	+40.8%	+26.9%	**109%**
2022	Jan 3	Oct 12	**−25.4%**	**+33.3%**	−0.6%	+24.2%	**50%**
Average			**−28.2%**	**+45.5%**	**+4.1%**	**+17.4%**	**62%**

YE = year-end. "Next-year return" is the following calendar year's price return, the number most investors see. 2025 fell 18.9% from Feb 19 to Apr 8, just short of the 19% screen, and 2026 is not complete.

+17%
Average next-year return: the number on the statement

+4%
Average net change from the high to the next year-end

+46%
Average gain from the low to the next year-end

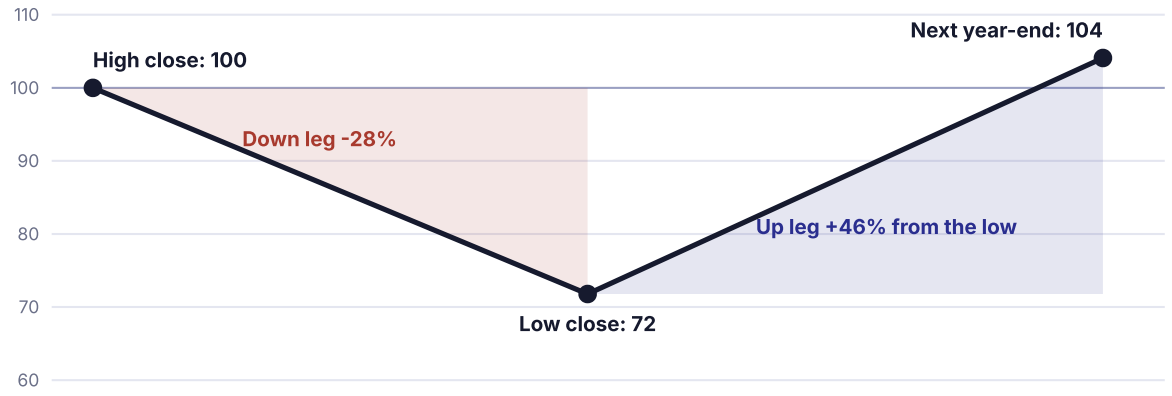
62%
Average ground covered, down and back, as a share of the high

Measured from the high, 5 of the 11 years were still below that high at the next year-end. Measured by the calendar, most of those same years look like strong recoveries.

THE AVERAGE EPISODE

03 Long only vs. both directions

Start the average year at 100 on its high close. The index fell to 72, then finished the next year at 104. The net change was about 4 points. The market moved about 62 points to get there.



100% long only

Most ETFs and mutual funds

- Fully exposed to the down leg, with no way to step aside inside the fund
- Must earn back the decline before making new progress: a 28% drop needs a 39% gain to break even
- Keeps the net change, about 4% from the high in the average year

Two-directional

Can be long, short or flat

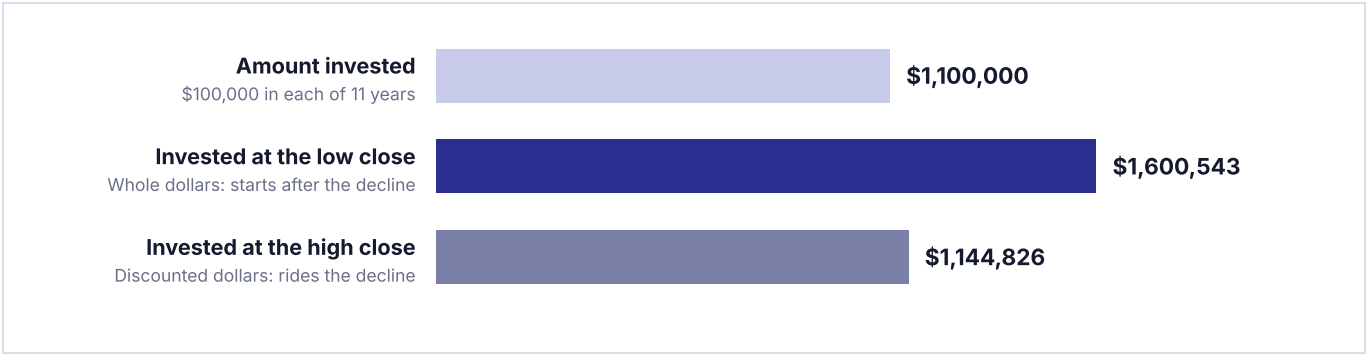
- Built to manage the down leg as well as the up leg
- The range, not just the net change, becomes the working opportunity
- Outcomes depend on timing and risk control; no approach captures the full range, and losses can occur in both directions

This is the same idea as the MAZing daily range, measured over a year instead of a session: the net move is a small slice of the ground the market covers.

Index points shown are market movement, not trading results. Short selling and leveraged instruments carry the risk of losses greater than the amount invested.

04 WHERE THE MONEY STARTS
Dollars before the drop vs. after it

Discounted dollars are already invested when the decline begins; they must recover the loss first. **Whole dollars** are new money, such as cash held back or added at the low, and they start working from the bottom. Below: $100,000 put in at each year's high close vs. at its low close, both held to the next year-end.



Year	High to low	$100,000 at the high	$100,000 at the low	Difference
1987	−33.5%	$82,466	$124,026	**$41,561**
1990	−19.9%	$113,048	$141,166	**$28,118**
1998	−19.3%	$123,805	$153,482	**$29,677**
2001	−29.7%	$64,046	$91,098	**$27,051**
2002	−33.8%	$94,832	$143,148	**$48,316**
2008	−48.0%	$77,054	$148,198	**$71,143**
2009	−27.6%	$134,550	$185,896	**$51,346**
2011	−19.4%	$104,589	$129,744	**$25,155**
2018	−19.8%	$110,237	$137,416	**$27,178**
2020	−33.9%	$140,755	$213,023	**$72,268**
2022	−25.4%	$99,443	$133,346	**$33,903**
Total		**$1,144,826**	**$1,600,543**	**$455,718**

RECOVERY MATH

05 Why the down leg costs more than it looks

A loss and the gain needed to repair it are not the same size. The deeper the decline, the wider the gap.

Decline	Gain needed to break even	Example
19%	**+23.5%**	Smallest decline on the list (1998, 2011, 2018)
25%	**+33.3%**	2022
28%	**+38.9%**	Average of the 11 years
34%	**+51.5%**	1987, 2002, 2020
48%	**+92.3%**	2008

Taken together. Across the 11 years, the same $1.1 million ended at $1,144,826 when invested at the highs and $1,600,543 when invested at the lows, a difference of $455,718. Nobody reliably buys the exact low. The gap shows what the down leg costs a long-only position, and why managing it matters.

Terms

High close — The highest daily close of the year before the low.

Low close — The lowest daily close that followed the high in the same calendar year.

Ground covered — The decline plus the move from the low to the next year-end, each as a share of the high close.

Whole / discounted dollars — New money entering after a decline vs. money already invested before it.

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About the author

Michael A. Zingale, the "MAZ" in MAZing, was licensed in life insurance in 1988 and built the early part of his career around cash value life insurance used to pay estate taxes. As the federal estate tax exemption rose, from $600,000 per person in the 1990s to about $15 million today, he kept his life insurance practice and added investment services in the early 2000s. About twenty years later he added short-timeframe index forecasting and trading. Since January 2021 he has published a daily NQ futures forecast on TradingView before each U.S. open.