

What“1-in-100” Market Losses Mean – And What Pension Investors Should Think About

Portfolio Value

Annual Volatility (%) ⓘ

Currency

Risk Horizon

\$ 100000

15

USD (\$)

Standard

Balanced

Need Help Setting Volatility?

Take our risk tolerance assessment to get personalized volatility recommendations

Take Assessment

Conservative

Balanced

Growth

Aggressive

8-12%

12-18%

18-25%

25%+

Volatility Tip:

This represents the typical annual fluctuation range of your portfolio. Higher values mean more potential for both gains and losses.

Portfolio Value:

Enter your total investable assets or the specific portfolio amount you want to analyze.

Comprehensive Portfolio Analysis

Explore 13 advanced analysis tools to understand your portfolio's risk profile and potential outcomes

Basic Analysis

Dynamic

Graph

VaR CVaR

Monte Carlo

Goal Planning

Stress Testing

Market Regimes

Historical

What-If

Tutorials

Psychology

Export

Expected Worst-Case Losses

Statistical illustrations based on normal distribution. Not predictions.

Timeframe	25% Probability (1-in-4)	16% Probability (1-in-6)	5% Probability (1-in-20)	2.5% Probability (1-in-40)	1% Probability (1-in-100)
Daily	\$633 (0.6%) Remaining: \$99,367	\$945 (0.9%) Remaining: \$99,055	\$1,550 (1.5%) Remaining: \$98,450	\$1,852 (1.9%) Remaining: \$98,148	\$2,202 (2.2%) Remaining: \$97,798
Weekly	\$1,394 (1.4%) Remaining: \$98,606	\$2,080 (2.1%) Remaining: \$97,920	\$3,411 (3.4%) Remaining: \$96,589	\$4,077 (4.1%) Remaining: \$95,923	\$4,847 (4.8%) Remaining: \$95,153
Monthly	\$2,901 (2.9%) Remaining: \$97,099	\$4,330 (4.3%) Remaining: \$95,670	\$7,101 (7.1%) Remaining: \$92,899	\$8,487 (8.5%) Remaining: \$91,513	\$10,089 (10.1%) Remaining: \$89,911
3 Months	\$5,025 (5.0%) Remaining: \$94,975	\$7,500 (7.5%) Remaining: \$92,500	\$12,300 (12.3%) Remaining: \$87,700	\$14,700 (14.7%) Remaining: \$85,300	\$17,475 (17.5%) Remaining: \$82,525
1 Year	\$10,050 (10.1%) Remaining: \$89,950	\$15,000 (15.0%) Remaining: \$85,000	\$24,600 (24.6%) Remaining: \$75,400	\$29,400 (29.4%) Remaining: \$70,600	\$34,950 (34.9%) Remaining: \$65,050

Most investment risk tools are technically correct and practically useless.

They tell you things like: “*There is a 1% probability of a 35% loss in a year.*”
Which many people understandably translate as: “*That happens once every hundred years.*”

It doesn’t.
And believing it does real damage to people’s pensions.

The problem is not the maths.
The problem is the framing.

Investors do not live inside probability distributions. They live inside **drawdowns**.

What investors actually experience

A drawdown is simple. It is the fall from a portfolio's peak value to its lowest point before recovery.

That is what shows up on statements.

That is what causes panic.

That is what leads people to abandon perfectly sound long-term plans.

No one phones their adviser saying, *"I'm experiencing the 1% left-tail outcome."*

They say: *"My pension is down 30%. What do I do?"*

Reframing risk in drawdown terms

If a portfolio runs at roughly 15% annual volatility – which many "balanced" pensions do – history gives us some blunt but useful rules:

- Normal bad periods often mean 25–30% drawdowns
- Serious market stress means 30–40% drawdowns
- Full crises can push losses beyond 40%

That "35%" loss shown as a "1-in-100" outcome is not rare at all.

It is a **once-or-twice-in-a-lifetime experience for anyone who stays invested long enough.**

2008 wasn't a statistical anomaly.

Nor was 2020.

Nor was the 2022 bond-equity collapse.

The maths assumes calm markets. Markets are rarely calm when it matters.

Why this matters for pensions specifically

A pension is not just a portfolio.

It is a long-dated liability with a human attached to it.

The real risk is not volatility.

It is **behaviour under stress.**

In the real world:

- 10–15% losses cause discomfort
- 20% losses cause anxiety and second-guessing
- 25% losses trigger strategy changes
- 30%+ losses cause panic, capitulation, or permanent loss of confidence

Once someone sells in fear and fails to reinvest properly, the damage is often irreversible.

The pension-safe volatility rule

Instead of asking *"How much return can I target?"*, pension investors should ask:

"What loss can I survive without changing my behaviour?"

A practical rule of thumb:

- Maximum tolerable drawdown $\approx 2.5\times$ portfolio volatility

Which implies:

- 20% drawdown tolerance $\rightarrow \sim 8\%$ volatility
- 25% drawdown tolerance $\rightarrow \sim 10\%$ volatility
- 30% drawdown tolerance $\rightarrow \sim 12\%$ volatility

Yet many default pensions quietly run at 14–18% volatility, implying drawdowns of 30–45%.

That may look fine in a spreadsheet.

It does not look fine on a real statement during a real crisis.

The line that actually matters

Here is the rule every pension investor should remember:

If a 30% temporary loss would cause you to change strategy, your pension risk is too high.

Lower volatility does not mean low ambition.

It means higher odds of staying invested long enough for compounding to work.

The biggest threat to retirement outcomes is not conservative portfolios.

It is investors being pushed into drawdowns they were never emotionally prepared to endure.

Markets are not polite.

Your pension strategy needs to be robust to that fact.

Statistics do not keep a calendar.

A “1-in-100” outcome does **not** mean:

- Once per century
- One bad year, then 99 calm ones

It means:

- Every year has a small chance of being very bad
- Bad years can happen close together
- Crashes cluster

That’s exactly what history shows.