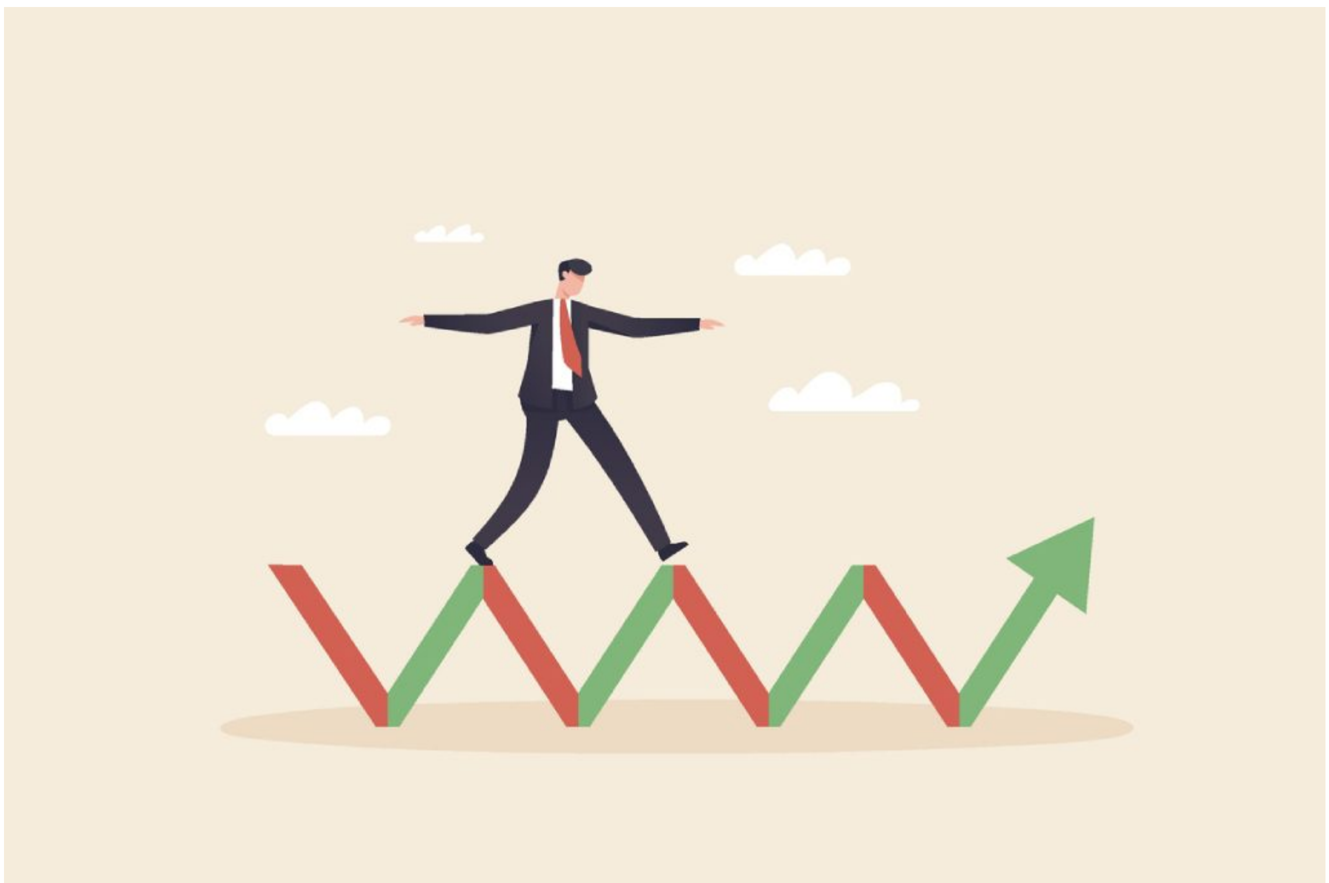
Stocks vs. bonds: where the risk lies

Stocks or bonds: Which are riskier? It depends how you measure risk, by volatility, price fluctuations, or terminal wealth.



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Conventional wisdom says stocks are a riskier investment than bonds. But IESE's **Javier Estrada** says it depends how you define risk.

Sure, stocks tend to be more volatile than bonds. But, to paraphrase Warren Buffet's investment partner Charlie Munger, what difference does extra volatility make so long as it

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all works out in the end?

Working out in the end is the focus of Estrada's empirical study spanning 19 countries over 110 years. The professor of finance analyzes the terminal wealth resulting from an initial $100 investment in either stocks or bonds held for 10, 20 and 30 years (measuring all possible overlapping holding periods between 1900 and 2009).

The results: Stocks win. For long-term investors, stocks offer more upside potential and more downside protection than bonds, even when "tail risks" strike.

What tail risk?

Tail risks are extreme events that have a large impact on a portfolio but a very low probability of occurring. (As the standard distribution of returns follows a "bell curve," both the upper and the lower extremes or edges of the bell are described as the tails.)

So, why focus on tail risks? Estrada explains: "Most investors tolerate moderate levels of volatility and losses, which are typically seen as inherent to investing. What investors fear the most, and what has a big influence on their investment decisions, are extreme events, often called outliers or black swans. Hence the approach discussed here that emphasizes tail risks."

Eyes on the prize: terminal wealth

Specifically, Estrada looks to the bottom 10, 5 and 1 percent of investment results for both stocks and bonds and finds that even in these bad (to worst) case scenarios, stocks offered more investment protection than bonds in the 10-, 20- and 30-year holding periods for the countries studied (with a few exceptions). For long term investors, stocks have been less "risky" than bonds if risk is measured with terminal wealth in mind.

For example, look at a $100 investment in stocks vs. a $100 investment in bonds held over 30 years in two global portfolios (of the 19 countries in the study) — one of stocks and the other of bonds. If you were unlucky enough to land in the bottom 5 percent of results for a 30-year stretch, you saw your investment in bonds fall considerably (to $58 adjusted for inflation), with terminal wealth more than 40 percent below the initial investment. But if you were in the bottom 5 percent of returns for stocks, you saw your initial investment merely double (to $216, adjusted for inflation) over 30 years. Put another way, if the 5-percent "lower tail risk" struck your pension fund, you tended to be much better (272 percent better) off in stocks.

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And what about the upside potential? For the average returns over 30 years, $100 in stocks yielded $622, on average, while $100 in bonds yielded $188, on average. For perspective, Estrada also looks at the "upper tail" terminal wealth and finds $100 in stocks yielding $1,281 in the upper 5 percent of returns and bonds yielding $568.

Risk: bumpy ride or final tally?

Estrada sums up: "Investors who focus on uncertainty are likely to view stocks as riskier than bonds, and those who focus on long-term terminal wealth are likely to view stocks as less risky than bonds even if they are concerned with tail risks." These are the conclusions reached by his study because even when investors were unlucky enough to land in the bottom 10, 5 or 1 percent of the distribution curve, they were better off in stocks than bonds — with very few exceptions.

In his article for the *Journal of Asset Management* on the study, Estrada notes that his "rethink" of risk is especially relevant to younger investors saving for retirement. "For this type of investor, how relevant are the short-term fluctuations in the value of his portfolio that will inevitably occur along the way?" If that profile of investor can hold on for the duration, the bumpier road might work out best in the end.

See also "**Retire at Your Own Risk**" and "**A Comforting Read in Times of Stock Market Volatility**"

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