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What Is Beta? How to Measure a Stock's Volatility

What beta measures, how to read values above and below 1, and why a low beta does not mean a safe investment.

Updated 4 Nov 2026

Read online: https://traderange.net/learn/what-is-beta-stock-volatility-pca86j28/



Some stocks move far more than the market on a typical day; others barely react. The number that measures this difference is called beta. Below, we explain what beta is, how it is calculated, and why it says less about risk than many investors assume.

What is beta?

Beta measures how much a stock's price has tended to move compared with the overall market. The market itself — usually represented by the S&P 500 in the US — has a beta of exactly 1. A stock with a beta above 1 has historically moved more than the market; one with a beta below 1 has historically moved less.

- Beta of 1: the stock has tended to move in line with the market.

- Beta above 1: the stock's moves have tended to be bigger than the market's, in both directions.
- Beta between 0 and 1: the stock has tended to move less than the market.
- Beta below 0: the stock has tended to move in the opposite direction to the market, which is rare for individual shares.

Worked example

Take a stock with a beta of 2. If the market rises 1% in a day, you would expect the stock to rise about 2% on average. On a day when the market falls 1%, you would expect a fall of about 2%. Because the relationship is an average, not a rule, individual days can look very different.

How beta is calculated

Beta is worked out from past returns. The formula is **beta = covariance of the stock's returns with the market ÷ variance of the market's returns**. In practice, data providers usually measure it with monthly returns over the past five years. As a result, beta is backward-looking: it describes how a stock has behaved, not how it will behave.

Comparing beta across companies

BETA AS REPORTED BY TRADERANGE'S DATA PROVIDER. TRADERANGE DATA AS OF 23 SEPTEMBER 2026; DATA IS DELAYED.

COMPANY	TICKER	BETA
Nvidia	NVDA	2.22
Tesla	TSLA	1.85
Amazon	AMZN	1.44
Microsoft	MSFT	1.11
Apple	AAPL	1.09
Procter & Gamble	PG	0.38
Coca-Cola	KO	0.34

At 2.22, Nvidia has the highest beta in the table, so its shares have historically moved more than twice as much as the market. Coca-Cola's is the lowest, at 0.34. Apple and Microsoft sit close to 1, so they have tended to move roughly in line with the market. The pattern is typical: consumer staples companies (whose products people buy in good times and bad) usually have low betas, while fast-growing technology companies usually have high ones.

What beta does not tell you

Beta measures only one type of risk: how much a stock moves with the market as a whole. This is known as systematic, or market, risk. Risks specific to one company — a failed product, a lawsuit or an accounting scandal — are not captured at all.

- A low beta is not the same as safety; a company can have a low beta and still lose most of its value if its own business fails.
- Beta changes over time. Five years later, a company that matures, takes on debt or changes its business can have a very different beta.
- Beta assumes the relationship with the market is stable. In a crash, though, correlations between stocks often rise, and low-beta stocks can fall further than expected.
- Because beta depends on the benchmark and the time period used, figures from different providers can differ.

How to use beta in practice

1. When the whole market moves, use beta to understand how much a stock may swing.
2. Think about the overall beta of a portfolio, not just individual stocks.
3. Combine beta with measures of the business itself, such as free cash flow and debt levels.
4. Recheck beta every so often, because it moves as the company and the market change.

Beta also helps with sizing positions. That said, a high-beta stock needs a smaller position to carry the same market risk as a low-beta one. With TradeRange's My Portfolio tool, you can test how different mixes of stocks behave against the S&P 500.

KEY TAKEAWAYS

- ✔ Beta measures how much a stock has moved compared with the market, which has a beta of 1.
- ✔ Above 1 means bigger swings than the market; below 1 means smaller swings.
- ✔ Beta is calculated from past returns and can change over time.
- ✔ It captures market risk only, not risks specific to one company.
- ✔ A low beta does not make a stock safe.

⚠ **Not investment advice**

The figures in this article are TradeRange market data as of 23 September 2026 and are delayed. They are meant for education only, not as investment advice.

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