

Correlation

Why Owning 20 Stocks Isn't Always Diversified — Lesson Explainer

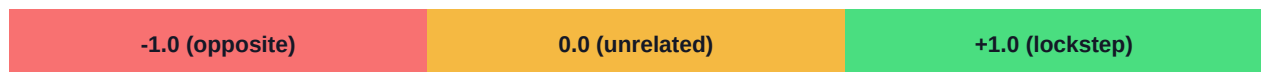
The Concept

Diversification isn't about how many holdings you have - it's about how independently they move. Correlation measures this on a scale from -1 to +1. +1 means two assets move in perfect lockstep; -1 means perfectly opposite; 0 means unrelated.

Twenty tech stocks are typically highly correlated - they share economic drivers. Real diversification comes from combining assets with low or negative correlation - different sectors, asset classes, or geographies.

Blending low-correlation assets can reduce portfolio volatility below a simple average of the individual volatilities - a genuine, near-free benefit of diversification.

The Correlation Scale



Twenty tech stocks typically cluster around +0.7 to +0.9. Stocks and long-term government bonds have often sat closer to 0, though this relationship can shift.

Illustrative Example: 20 Tech Stocks vs a Mixed Portfolio

Portfolio	# Holdings	Avg. Corr.	Indiv. Vol.	Port. Vol.
20 Tech Stocks	20	~0.80	~35%	~32%
Mixed (Stocks+Bonds+Gold)	20	~0.25	~35%	~19%

Both hold 20 positions with similar individual volatility - but the correlated tech portfolio barely reduces volatility, while the mixed portfolio's lower correlation cuts volatility by nearly half.

5 Things to Know About Correlation

1. Number of holdings isn't the same as diversification.
2. Correlation ranges from -1 to +1 - closer to 0 or negative is where real benefit lives.
3. Combining low-correlation assets can reduce volatility below a simple average.
4. Correlations aren't fixed - they tend to rise during market crises.
5. Different sectors or asset classes usually beat different stocks in the same sector.

4 Things to Check for Real Diversification

- Check sector spread - genuinely different sectors, or clustered in one or two?
- Check asset class spread - stocks, bonds, cash, and alternatives respond differently.
- Remember correlations can rise in crises - don't assume history repeats exactly.
- Count real diversification, not just ticker count.

Worth knowing:

correlation is estimated from historical data and can shift, especially in market stress. Treat correlation figures as a useful guide to structuring a portfolio, not a guaranteed, fixed relationship.

Quiz — Answer the questions, then check the key on the next page

1. What does correlation measure?

- A. The total number of holdings in a portfolio
- B. A company's dividend yield
- C. How closely two assets' prices move in relation to each other
- D. A stock's price-to-earnings ratio

2. Why might 20 tech stocks not provide much real diversification?

- A. Because tech stocks are always a bad investment
- B. Because 20 is not enough holdings
- C. Because tech stocks never make money
- D. Because they tend to be highly correlated, moving together on shared drivers

3. What is the range of possible correlation values?

- A. 0 to 100
- B. -1 to +1
- C. -100 to +100
- D. 0 to 1 only, never negative

4. Why is combining low-correlation assets sometimes called a 'free lunch'?

- A. It can reduce portfolio volatility below a simple average of the assets' volatility
- B. It guarantees higher returns with zero risk
- C. It eliminates all fees
- D. It only works for bonds

5. Why should you be cautious about relying on historical correlation figures?

- A. Correlation figures are always completely wrong
- B. Correlation never changes once measured
- C. Correlations can shift over time, and often rise during market crises
- D. Correlation only matters for cryptocurrency

Answer Key

1. What does correlation measure?

Correct answer: C. How closely two assets' prices move in relation to each other

Correlation ranges from -1 to +1 and measures how closely two assets move together.

2. Why might 20 tech stocks not provide much real diversification?

Correct answer: D. Because they tend to be highly correlated, moving together on shared drivers

High correlation concentrates risk in shared drivers, even with many holdings.

3. What is the range of possible correlation values?

Correct answer: B. -1 to +1

From -1 (perfectly opposite) through 0 (unrelated) to +1 (perfectly in lockstep).

4. Why is combining low-correlation assets sometimes called a 'free lunch'?

Correct answer: A. It can reduce portfolio volatility below a simple average of the assets' volatility

Blending imperfectly-correlated assets can lower overall volatility - a genuine benefit.

5. Why should you be cautious about relying on historical correlation figures?

Correct answer: C. Correlations can shift over time, and often rise during market crises

Correlations aren't fixed - they can rise sharply during crises, right when needed most.