Regime Detection

Knowing When the Rules Change — Lesson Explainer

The Concept

A backtest produces one overall number, but that number is an average across many different market conditions. Markets move through distinct regimes: low-volatility trending, range-bound/choppy, and high-volatility crisis.

A strategy tuned for one regime can behave very differently in another. Momentum can shine in a steady trend and get whipsawed range-bound; mean reversion can work range-bound and suffer in a strongly trending regime.

Regime detection uses measurable signals - rolling volatility, correlation between assets, trend strength - to estimate which regime the market is currently in, so exposure can be adjusted accordingly.

Illustrative Example: Three Regimes, Same Index

Period	Rolling Volatility	Avg. Correlation	Illustrative Regime
Jan-Jun	11% (annualized)	0.35	Low-Vol Trending
Jul-Sep	14% (annualized)	0.42	Range-Bound / Choppy
Oct-Nov	**34% (annualized)**	**0.81**	**High-Vol Crisis**

Correlation spikes alongside volatility in the crisis period - in sharp sell-offs, assets that normally move somewhat independently start falling together, which is why diversification tends to work worse precisely when it's needed most.

5 Things to Know About Regime Detection

1. No single strategy dominates every regime - momentum and mean reversion each have their spot.

2. Volatility tends to cluster - high-vol periods tend to be followed by more high-vol periods.

3. Correlation often spikes in crises - 'diversified' holdings can start moving together.

4. Regime detection is probabilistic, not a light switch - signals estimate likelihood, not certainty.

5. Adjusting exposure, not abandoning the strategy, is the usual response to a shifting regime.

4 Things to Check When Reading Regime Signals

• Track rolling volatility - a rising reading is often the earliest signal of shifting conditions.

• Watch cross-asset correlation - a jump between normally-independent assets warns of stress.

• Use multiple signals, not one - combine volatility, correlation, and trend strength.

• Adjust sizing gradually - scale exposure down rather than abrupt full on/off decisions.

Worth knowing:
this explains regime detection concepts using illustrative numbers - it isn't personalized financial advice, and no signal or threshold here is a recommendation to trade. Regime signals are probabilistic estimates, not guarantees, and markets can shift faster or differently than any model expects.

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

1. What is a "market regime" in this lesson?

A. A government policy that controls stock prices
B. A fixed calendar period like a fiscal quarter
C. A broad market condition, like low-volatility trending, range-bound, or high-volatility crisis
D. The exchange a stock is listed on

2. Why can a momentum strategy underperform in a range-bound regime?

A. Momentum strategies only work on bonds
B. A choppy, directionless market can whipsaw a strategy designed to ride a trend
C. Momentum strategies are illegal in range-bound markets
D. Range-bound markets have no prices at all

3. In the illustrative example, what happened to cross-asset correlation during the crisis period?

A. It dropped to zero
B. It became negative
C. It stayed exactly the same as the calm period
D. It spiked sharply higher, alongside volatility

4. Why does correlation spiking in a crisis matter for diversification?

A. Diversification tends to work worse exactly when it's needed most, as holdings start falling together
B. Diversification becomes more effective during a crisis
C. Correlation has no relationship to diversification
D. Crises only affect a single asset class

5. What is the usual practitioner response to a shifting regime signal, according to this lesson?

A. Ignore it completely and keep the strategy unchanged
B. Immediately liquidate the entire portfolio
C. Adjust exposure or position size gradually, rather than an abrupt full on/off decision
D. Switch to a completely different asset class permanently

Answer Key

1. What is a "market regime" in this lesson?

Correct answer: C. A broad market condition, like low-volatility trending, range-bound, or high-volatility crisis

Regimes are broad market conditions that markets move between, each with characteristic behavior.

2. Why can a momentum strategy underperform in a range-bound regime?

Correct answer: B. A choppy, directionless market can whipsaw a strategy designed to ride a trend

Momentum strategies rely on trends continuing; a choppy market lacks the sustained direction they depend on.

3. In the illustrative example, what happened to cross-asset correlation during the crisis period?

Correct answer: D. It spiked sharply higher, alongside volatility

Correlation rose from 0.35 in the calm period to 0.81 in the crisis period.

4. Why does correlation spiking in a crisis matter for diversification?

Correct answer: A. Diversification tends to work worse exactly when it's needed most, as holdings start falling together

Rising correlation during stress periods weakens diversification exactly when it matters most.

5. What is the usual practitioner response to a shifting regime signal, according to this lesson?

Correct answer: C. Adjust exposure or position size gradually, rather than an abrupt full on/off decision

Many practitioners scale position size down in high-volatility regimes rather than abrupt on/off decisions.