

Crypto Trading & Markets

Pre-Class Discovery Handout

Lesson 08 · Complete before class · 25–30 minutes

Activity 1: Explore a Live Order Book

10 min

Visit a crypto exchange such as Binance, Coinbase, or TradingView and open the BTC/USDT order book. Answer:

1. What is the current bid-ask spread for BTC/USDT? How does it compare to the ETH/USDT spread?
2. Identify large buy and sell walls. At which price levels do you see them?
3. Estimate the slippage if you placed a market order to buy \$10,000 worth of BTC right now.
4. Observe the order book at two different times of day. How does the spread change?

Bonus: Take a screenshot of the order book and annotate the bid side, ask side, spread, and any visible walls.

Activity 2: Backtest a Simple Strategy

10 min

Open TradingView or CoinGecko charts for BTC and examine the last 6 months of daily price data. Answer:

1. Add a 20-day and a 50-day simple moving average (SMA). How many crossovers occurred in 6 months?
2. Identify the most recent golden cross and death cross signals. Were they profitable if traded?
3. Add Bollinger Bands. How many times did price touch or break the lower band?
4. Would a simple mean-reversion strategy (buy lower band, sell upper band) have been profitable?

Signal Date	Type	Price	Outcome
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Activity 3: Risk Metrics Calculation

5 min

Download or look up BTC's daily closing prices for the last 30 days and calculate the following:

1. What is the daily standard deviation of BTC returns over the last 30 days?
2. Compute the 95% one-day Value at Risk: $\text{VaR}_{95\%} = 1.65 \times \sigma_{\text{daily}}$.
3. If you hold a \$10,000 BTC position, what is your dollar VaR?
4. What was the maximum drawdown over the same 30-day period?

Daily Std Dev: _____ **95% VaR:** _____% **Dollar VaR:** \$_____ **Max Drawdown:** _____%

Activity 4: CEX vs DEX Comparison

5 min

Choose one centralised exchange (e.g. Binance, Coinbase) and one decentralised exchange (e.g. Uniswap, dYdX). Answer:

1. What are the trading fees on each platform for a \$10,000 trade?
2. What KYC requirements does each platform impose?
3. Using a DEX aggregator (e.g. 1inch), estimate the slippage for swapping \$10,000 USDC to ETH.
4. For a trade of \$100,000+, which venue would you prefer and why?

Feature	CEX	DEX	Preference
Trading fee	_____	_____	_____
KYC required	_____	_____	_____
Slippage (\$10k)	_____	_____	_____
Custody of funds	_____	_____	_____

Key Terms

Term	Definition
Order Book	A real-time list of outstanding buy (bid) and sell (ask) orders for an asset, organised by price level. Depth of the order book reflects market liquidity.
Bid-Ask Spread	The difference between the highest price a buyer will pay (bid) and the lowest price a seller will accept (ask). Tighter spreads indicate higher liquidity.
Slippage	The difference between the expected execution price of a trade and the actual price received, caused by insufficient liquidity at the desired price level.
Market Maker	A participant who continuously posts both bid and ask quotes, providing liquidity to the market and earning the spread as compensation for bearing inventory risk.
Momentum Strategy	A trading approach that buys assets exhibiting recent upward price trends and sells those in downtrends, betting that short-term performance continues.
Mean Reversion	A strategy based on the assumption that asset prices oscillate around a long-run average and will revert toward that mean after deviating from it.
Arbitrage	The simultaneous purchase and sale of the same asset (or equivalent assets) on different venues to profit from price discrepancies, with minimal risk.
Value at Risk (VaR)	A statistical measure of the maximum expected loss over a given time horizon at a specified confidence level (e.g., 95% 1-day VaR = $1.65 \times \sigma_{\text{daily}}$).
Sharpe Ratio	A risk-adjusted performance measure calculated as excess return divided by volatility. Higher values indicate better return per unit of risk taken.
Maximum Draw-down	The largest peak-to-trough decline in portfolio value over a given period, expressed as a percentage. A key measure of downside risk.
AMM	Automated Market Maker. A DEX mechanism that uses a mathematical formula (e.g., $x \cdot y = k$) and liquidity pools instead of an order book to price assets.
MEV	Maximal Extractable Value. Profit that block validators or searchers can capture by reordering, inserting, or censoring transactions within a block.
Wash Trading	An illegal practice where a trader simultaneously buys and sells the same asset to generate artificial trading volume and create a misleading impression of market activity.
Spoofing	A form of market manipulation where large orders are placed with no intention of execution to mislead other participants about supply or demand, then cancelled.
