Exchanges / Decentralized Finance

FINTECH 520
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Exchanges

Trading versus Investing

Traders

- Typically take advantage of market volatility
- Enter and exit positions more frequently
- Typically seek smaller returns with each trade (since they're often entering multiple trades)

Investors

- Typically seek to generate returns over a longer period (e.g., years or decades)
- Since they have longer time horizons, their return expectations tend to be higher as well

Bear Market

- A bear market refers to a **steep fall in prices** of securities, resulting in an **overall sentiment of negativity** in the market
- Such declines typically instigate a sense of apprehensiveness in investors, **leading many to panic** sell their holdings
- Bear markets are typically identified by **a drop of at least 20%** from its peak in several market indices over a span of 2 months

Fundamental Analysis

- An attempt to establish the **intrinsic value** of an asset or a business
- A fundamental business analysis might include a review of earnings, financial statements, competition, etc.
- A fundamental analyst attempts to identify when prices are not accurately reflecting their view of value

Technical Analysis

- A technical analyst focuses strictly on **historical price fluctuations** and **volume** data
- The technical analyst views **the price** of an asset as the **true reflection of supply and demand**
- Technical analysts evaluate market trends based on charts and historical price action in the belief that **future price movements can be predicted** from this data

Fundamental versus Technical Analysis

- **Fundamental and technical analysis and are often combined** to give traders a more complete picture of potential supply and demand
- Many analysts of both types build models and then look at charts to confirm their assumptions or **fine tune entries and exits**
- Many traders review charts and fundamentals in tandem to **determine future secular trends**

larger trends

fundamental - get invested large position
technical - how to enter over period of time

Order Types

Market Order

- An instruction to buy or sell immediately at the market's current price

Limit order

- An instruction to wait until the price hits a limit before being executed

All other order types are variations on these themes

Bid-Ask Spread

Bid price – buy

- The highest price that a particular buyer is willing to pay on their buy order when trading an asset on an exchange

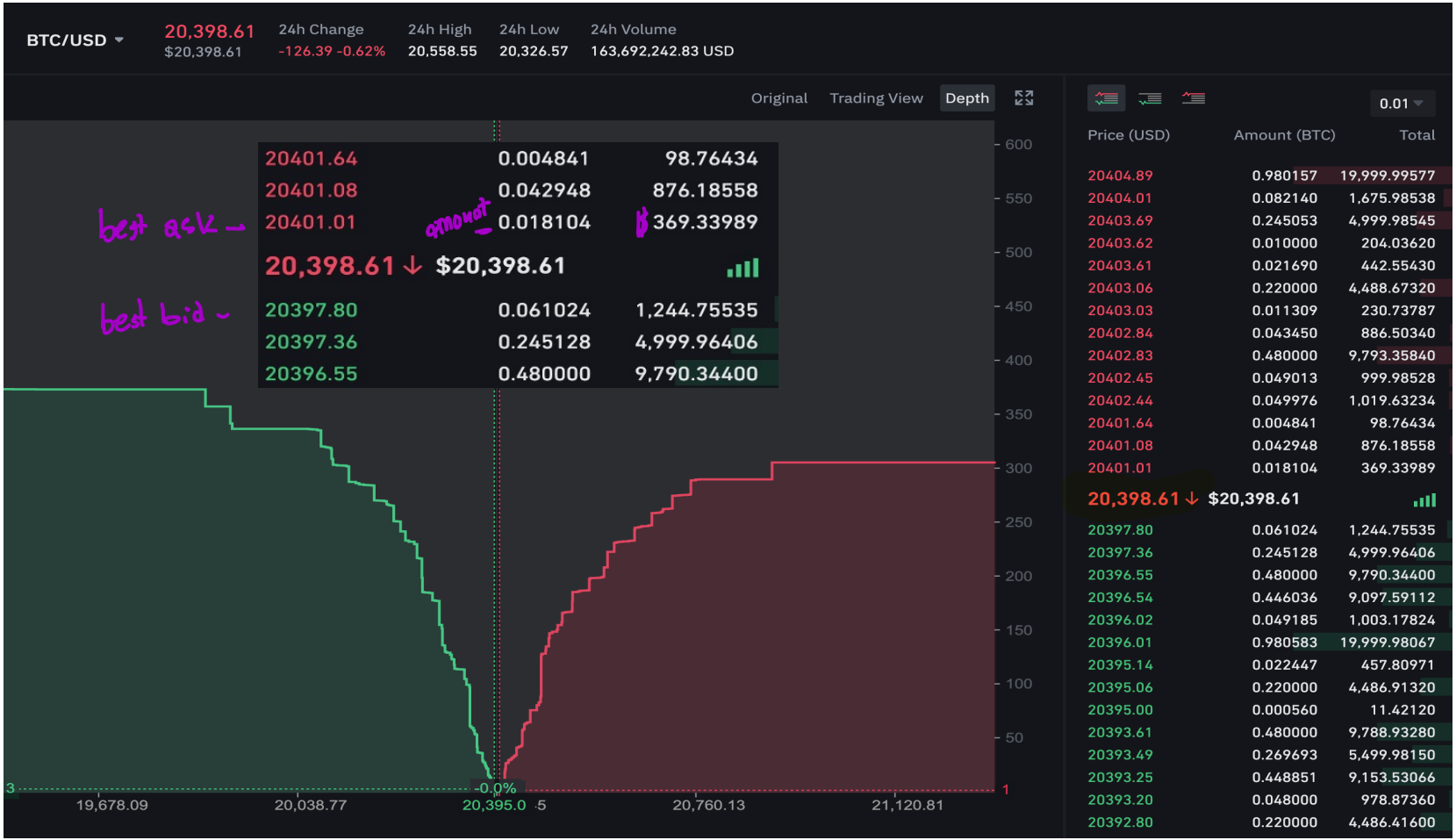
Ask price – sell

- The lowest price that a particular seller is willing to accept on their sell order when trading an asset on an exchange

Bid-Ask Spread – difference b/w the two

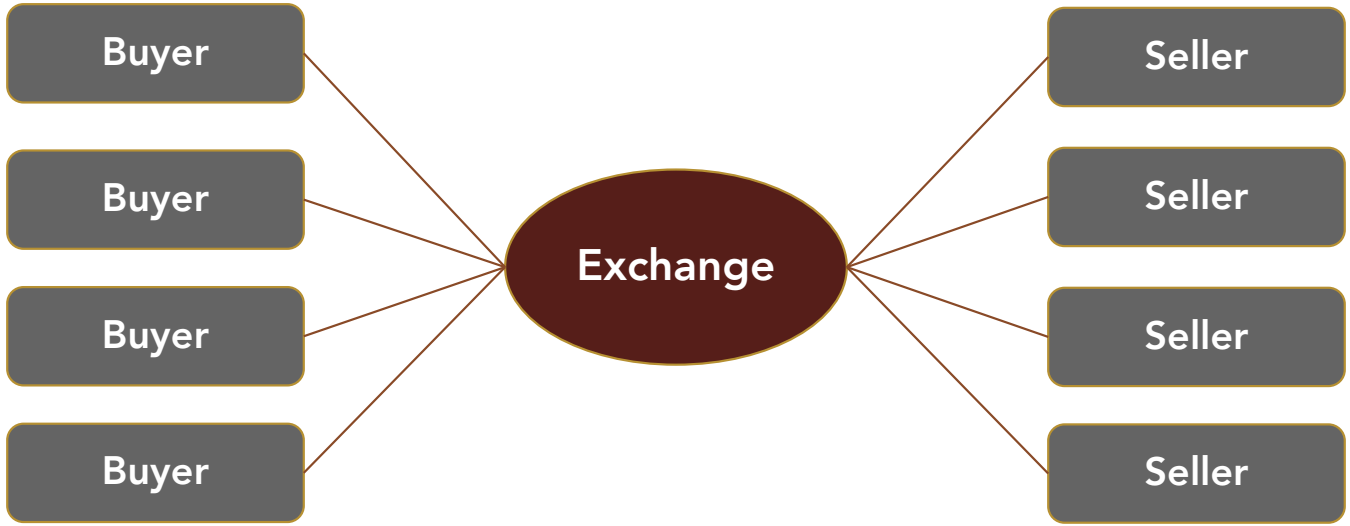
- The difference between the highest bid price and the lowest ask price of an order book

BTC Order Book on Binance



Centralized Exchange

disintermediation



The New York Stock Exchange

Centralized Cryptocurrency Exchange

- Deposit fiat currency or cryptocurrency with the exchange
- You don't own the private keys to the crypto funds on deposit
- **Transactions don't occur on the public blockchain**, but are allocated by the exchange to users in its own database
- The general workflow is streamlined because the **slow speeds of blockchains don't impede trading**, and everything occurs in a single entity's system faster than defi / on chain
- Generally speaking, cryptocurrencies are easier to buy and sell, and you have more tools available to you

disintermediation

Decentralized Exchange (DEX)

- Decentralized exchanges **allow participants to trade crypto assets without having to rely on an intermediary** for clearing transactions
- A DEX relies on self-executing smart contracts to facilitate trading
- **Participants retain custody of their cryptocurrencies and are responsible for managing wallets and private keys**

Liquidity

The ability to buy or sell assets without causing any sharp changes in price

- Transaction Speed
- Bid-Ask Spread
- ** Depth ** – orders
- Usability = (f) crypto adoption
  function of

Pros and Cons of DEXs

Pros

- No KYC
- No counterparty risk
- Tokens that aren't listed on centralized exchanges can still be traded freely on DEXs, provided there's supply and demand

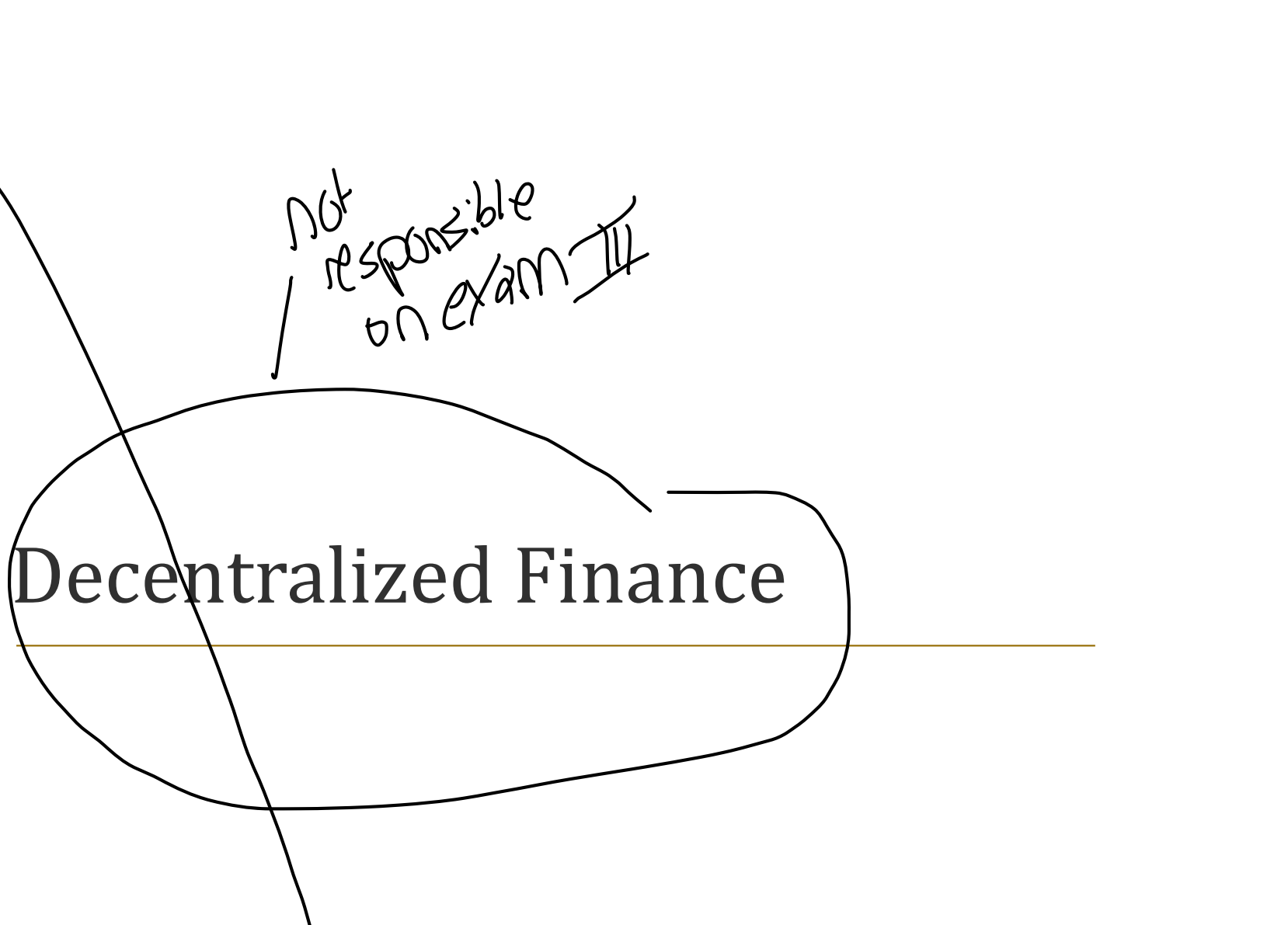
Cons

- Usability
- Not nearly as user-friendly as CEX
- Liquidity

Trading volume on CEXs dwarfs that of DEXs

- Fees

Fees are higher when the network is congested or if you're using an on-chain order book

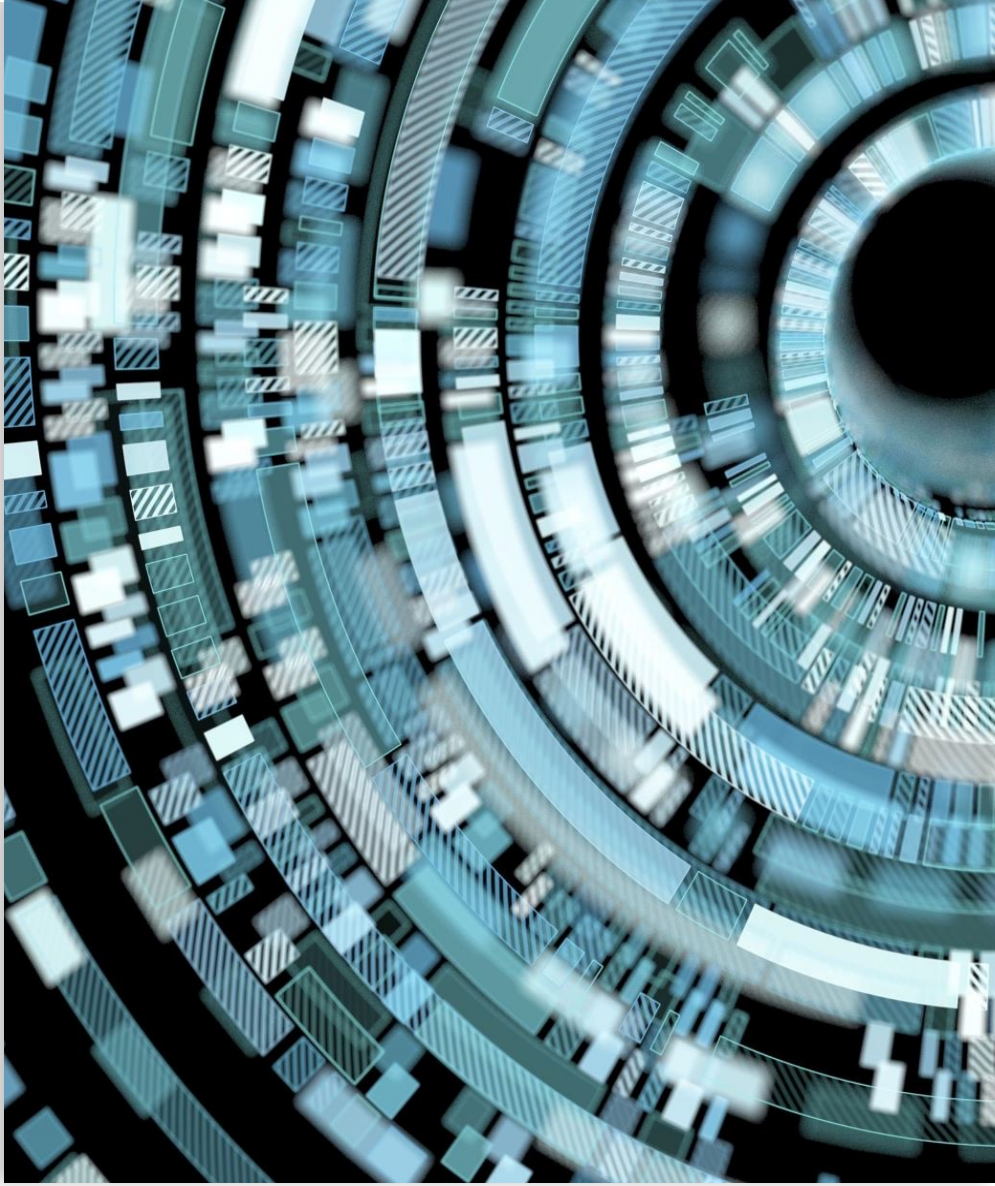


Decentralized Finance

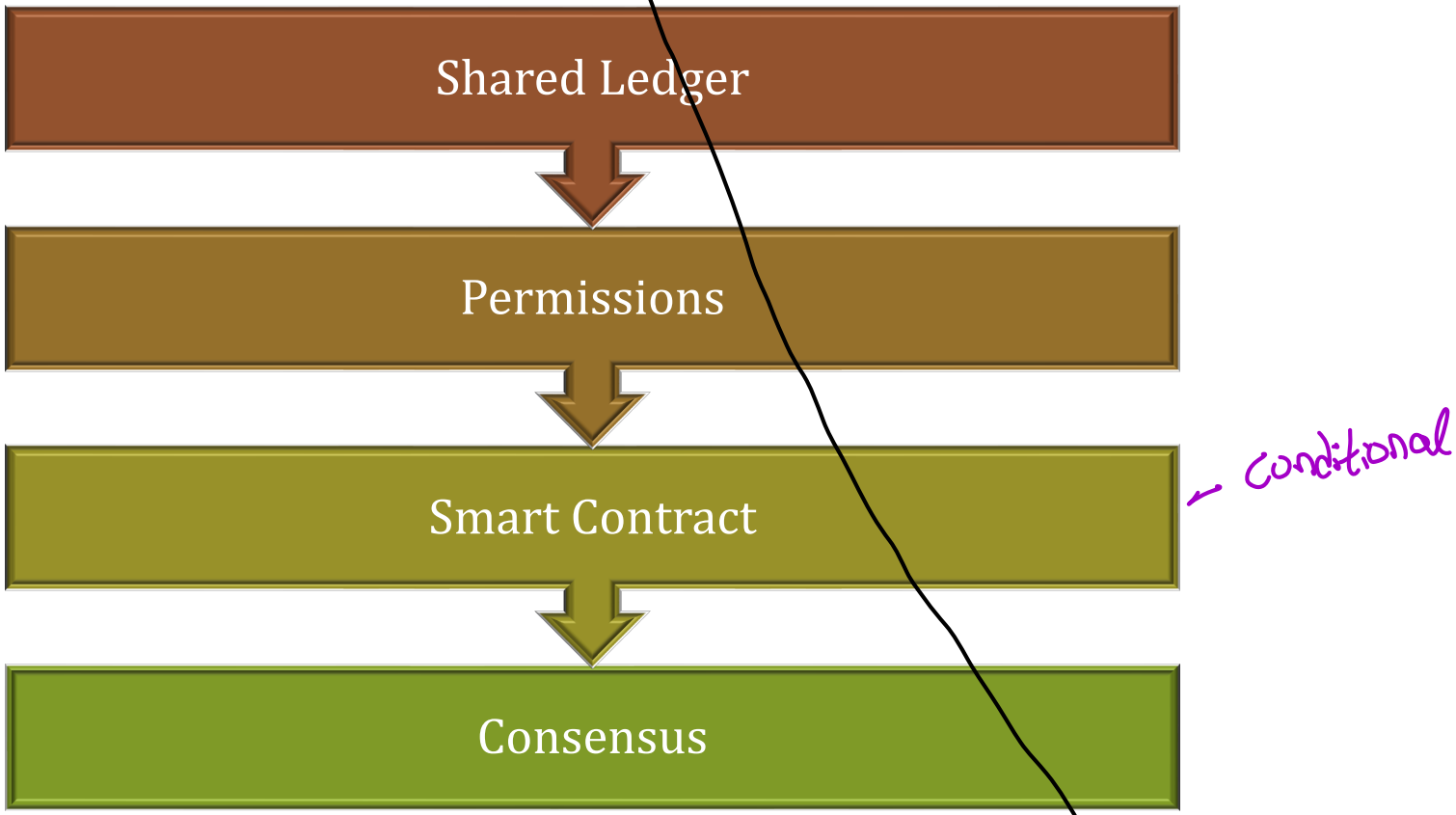
What is Blockchain?

can't be changed

Blockchain is a shared, immutable ledger that facilitates the process of recording transactions and tracking assets in a business network



Blockchain – Key Concepts



Blockchain Use Cases

6 Categories of Blockchain Use Cases

Record Keeping

Static Registry

- Distributed database for storing reference data

Examples:
- Land title
- Food safety and origin
- Patents

Identity

- Distributed database with identity-related information
- A static registry treated as a separate group of use cases due to extensive set of identity-specific use cases

Examples:
- Identity fraud
- Civil-registry and identity records
- Voting

Smart Contracts

- Set of conditions recorded on a blockchain triggering automated, self-executing actions when these predefined conditions are met

Examples:
- Fractional investing
- Drug supply chain

Transactions

Dynamic Registry

- Dynamic distributed database that updates as assets are exchanged on the digital platform

Examples:
- Insurance-claim payout
- Cash-equity trading
- New music release

Payments Infrastructure

- Dynamic distributed database that updates as cash or cryptocurrency payments are made among participants

Examples:
- Cross-border peer-to-peer payment
- Insurance claim

Other

- Standalone use case not fitting any of the previous categories

Examples:
- Initial Coin Offering
- Blockchain-as-a-Service

Source: McKinsey

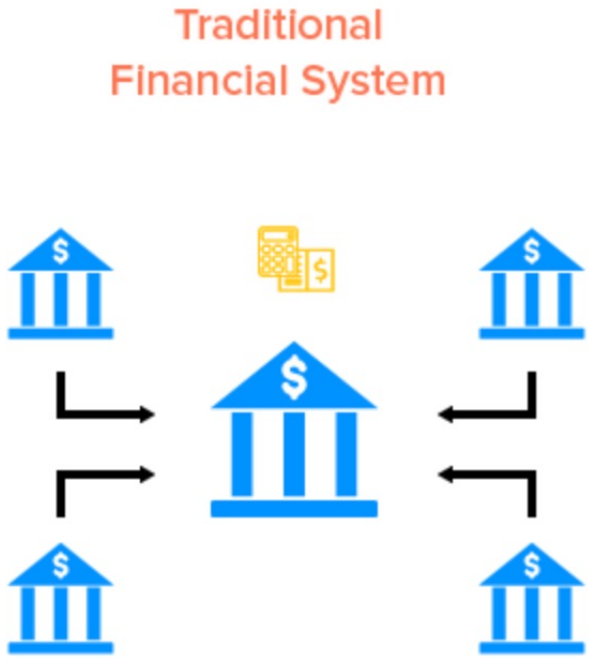
Decentralized Finance (DeFi) Explained

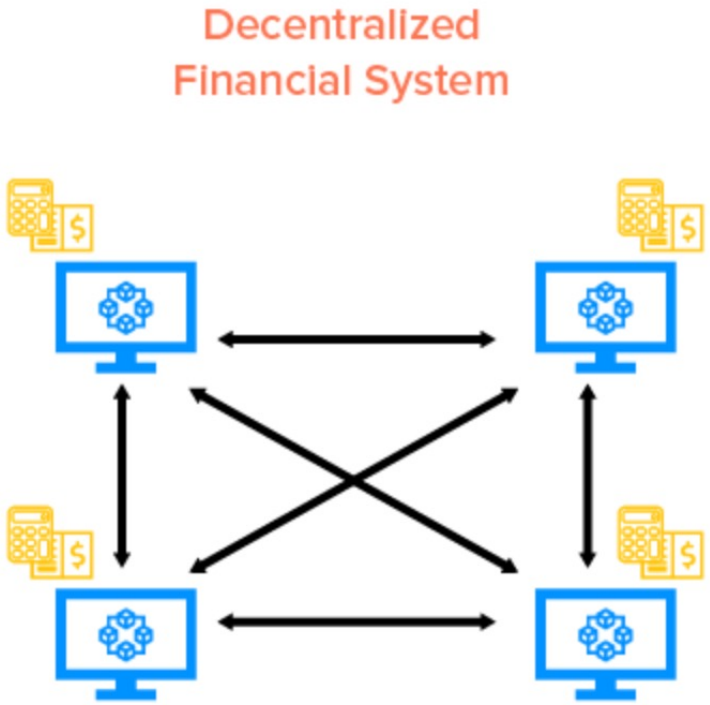
Decentralized Finance (DeFi)refers to *financial services that are built on public blockchains and smart contracts*, with the use and control of the system distributed among many parties

DeFi offers the promise of financial services that are *trustless, censorship resistant, permissionless, more secure, resistant to manipulation, more accessible, and transparent*

The value of digital assets locked into DeFi services grew from less than $1 billion in 2019 to over $15 billion at the end of 2020, over $250 billion in December 2021, and $54 billion at 2022 – 3Q

Centralized versus Decentralized Finance





Source: appinventiv

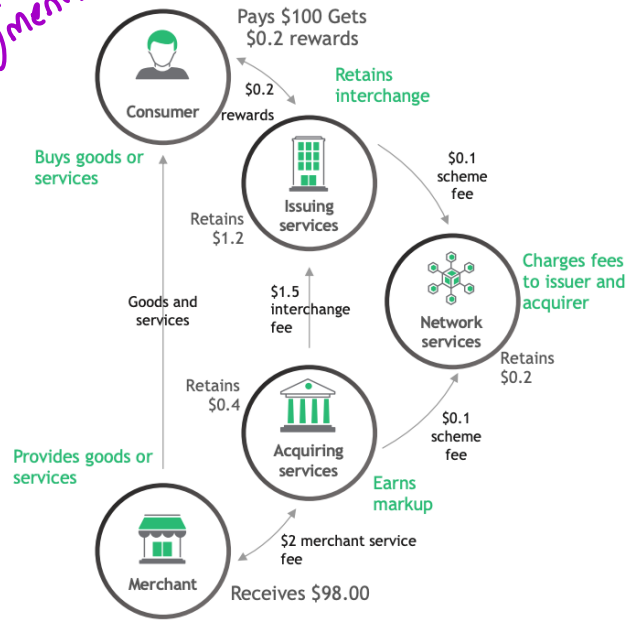
DeFi Building Blocks

Blockchains	Digital Assets	Wallets
• Distributed ledgers serving as the settlement layer for transactions.	• Tokens representing value that can be traded or transferred within a blockchain network.	• Software interfaces for users to manage assets stored on a blockchain. • Non-custodial wallet - user has exclusive control of funds through private keys • Custodial wallets - private keys are managed by a service provider
Smart Contracts	**Decentralized Applications (Dapps)**	**Governance Systems**
• Blockchain-based software code that carries out, controls, and documents relevant events and actions according to predefined terms and rules.	• Decentralized Applications (Dapps) • Software applications built out of smart contracts, often integrated with user-facing interfaces using traditional web technology	• Software-based mechanisms that manage changes to smart contracts or other blockchain protocols, often based on tokens that allocate voting rights to stakeholders.
Decentralized Autonomous Organizations	**Stablecoins**	**Oracles**
• Entities whose rules are defined and enforced in the form of smart contracts.	• Digital assets whose values are pegged to a fiat currency, a basket of fiat currencies or other stable-value assets	• Data feeds that allow information from sources off the blockchain, such as the current price of a stock or a fiat currency, to be integrated into DeFi services

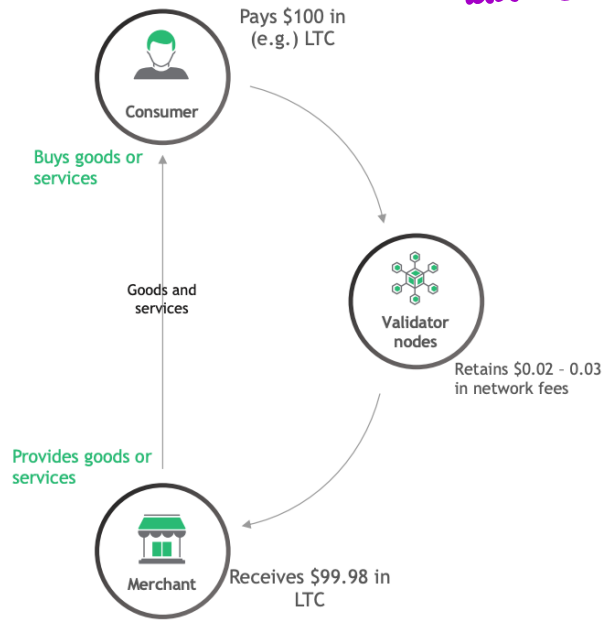
Where is DeFi most potentially impactful?

Payments

Current US payments



Looks like chain payments



Source: BCG, Crypto.com

Where is DeFi most potentially impactful?

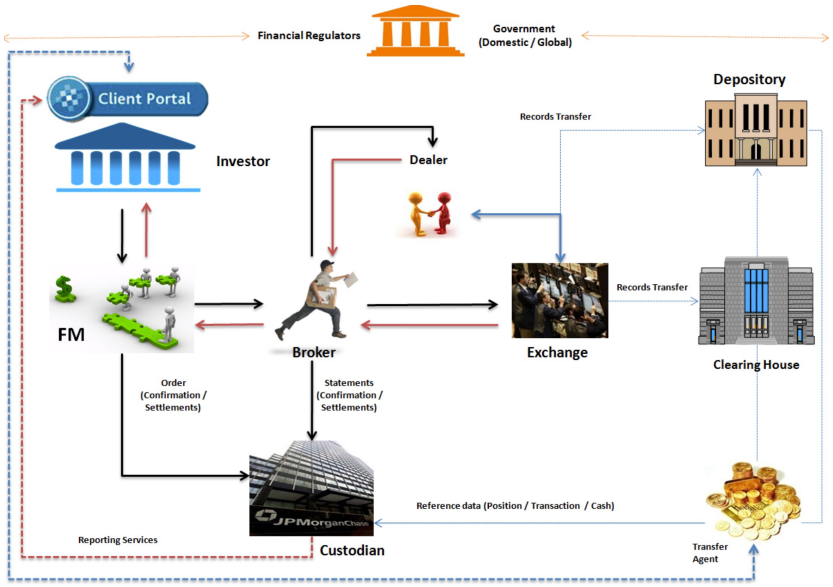
Lending

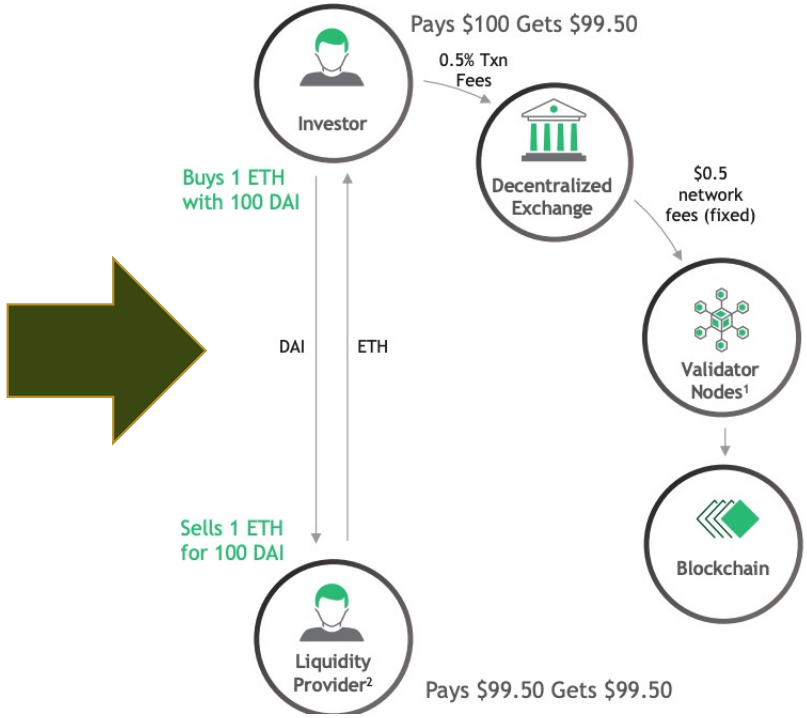
- Smart Contracts set the terms of the loan
  - Lending is collateralized
  - No need for credit checks or KYC processes
  - Loan occurs automatically when conditions of the smart contract are met (typically once sufficient collateral is deposited)
- 95% of the DeFi interest paid by borrowers is passed to lenders compared to 20-30% in CeFi
  - Banks extract higher economic rents due to their central position
  - Decentralized lending protocols have minimal ongoing costs, with the only cost being to compensate governance token holders for carrying out their functions

Source: BCG, Crypto.com

Where is DeFi most potentially impactful?

Exchanges





Source: BCG, Crypto.com

Where does DeFi need to improve?

1. Blockchain throughput and high network fees
2. Limited liquidity
3. Security and smart contract risk
4. The necessity of over-collateralization
5. Regulatory risk
6. Consolidation of DeFi protocols around a single network


+18.87%
+18.87%
DEFi
+15.17%
+38.17%
+18.87%