

MEV: Maximal Extractable Value Explained

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Maximal extractable value, or MEV, refers to the profit that block producers can capture by controlling the order, inclusion, or exclusion of transactions within a block. Originally called "miner extractable value" during Ethereum's proof-of-work era, the term was broadened to "maximal" as proof-of-stake validators took over block production. MEV is not a bug or an exploit in the traditional sense — it is an emergent property of how public blockchains work.

How MEV Is Generated

Every pending transaction sits in a public mempool before it is confirmed. Anyone watching the mempool can see what trades, liquidations, or arbitrage opportunities are about to occur. Block producers and specialized actors called searchers exploit this visibility in several ways.

Front-running is the most straightforward: a searcher spots a large buy order for a token, submits their own buy first with a higher gas fee, and then sells after the original order moves the price. Sandwich attacks extend this by placing orders both before and after the victim transaction, capturing the price movement from both sides. Arbitrage between decentralized exchanges is another major source, where price discrepancies across pools are closed for profit the moment a block is assembled.

Liquidations on lending protocols like Aave or Compound also produce MEV. When a borrower's collateral falls below the required threshold, anyone can repay the debt and claim the collateral at a discount. Searchers race to be first, bidding up gas fees to win the liquidation reward.

The Role of Flashbots and Block Builders

Before tools like Flashbots emerged, MEV extraction primarily happened through gas price wars, congesting the network and burning fees. Flashbots introduced a private transaction relay — a separate channel where searchers submit "bundles" of transactions directly to block builders without broadcasting them to the public mempool. This reduced failed transactions and wasted gas while making MEV extraction more efficient and less disruptive.

The MEV supply chain on Ethereum today involves searchers who find opportunities, builders who assemble blocks from bundles, and validators who choose the most profitable block to propose via MEV-Boost. This separation of roles, known as proposer-builder separation, concentrates block-building expertise among a small number of sophisticated builders.

Why MEV Matters

MEV has several concrete effects on users and the network. Ordinary traders face worse execution prices when their transactions are sandwiched. The centralization pressure among builders raises concerns about censorship resistance, since a handful of builders now produce the majority of Ethereum blocks.

On the positive side, MEV-driven arbitrage keeps prices aligned across decentralized exchanges, improving market efficiency. Liquidation bots ensure lending protocols remain solvent rather than accumulating bad debt.

Researchers are actively working on mitigations. Encrypted mempools aim to hide transaction details until after ordering is finalized, eliminating front-running opportunities. Single-slot auctions and other mechanism designs try to distribute MEV more fairly or reduce it structurally. MEV remains one of the most actively studied problems in blockchain design because it sits at the intersection of game theory, market microstructure, and protocol engineering.

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GENERATED BIP39 MNEMONICS

The archive section of this document contains 52 generated word sequences illustrating the BIP39 format.

- | | |
|--|---|
| 1) decline text humor parrot carry echo
fog rural shadow apology cabbage
feature | 2) butter purse spare budget present
visa absurd cruel during front amateur
era |
| 3) market cash already sorry window
cheese ghost ladder amused sun blush
baby | 4) animal candy badge knee mother split
element cousin poem garment dirt palace |
| 5) patient rule crisp stick question
invest slam future impose rally cable
ignore | 6) slide fee toward vague flock much
forum awkward detail guilt neutral
bunker |
| 7) mixture rib shadow sorry room wise
interest soft crack elephant wall team | 8) there mention mother donor marble
witness slide grant paper fame grab
outside |
| 9) about apart announce original match
flat pulse mutual next depend frequent
box | 10) know basic jewel sentence tiger
valley distance famous renew anger
wrestle oblige |
| 11) child outside vote rain tuition car
illness carry waste frog guess arch | 12) medal dust autumn fashion give
treat bamboo animal iron arrow excess
nasty |
| 13) liar faint wine online differ
cluster head human battle collect
history ridge | 14) escape ocean industry stomach rival
amount bar flat piece ticket priority
theory |
| 15) afford math run female wool
daughter power phrase bread receive
witness audit | 16) swallow hole silent siege such
critic lonely predict section stereo
dignity valve |
| 17) round pencil dolphin chef off
across fine image suggest heart huge
supply | 18) layer term verb inform pear credit
prison brass dizzy stuff regular ship |
| 19) kidney awkward tornado faith dry
kiwi confirm license edge donate rocket
palace | 20) appear bunker clap chair problem
report tag bargain motor smooth provide
trap |
| 21) marine document report umbrella
habit trend lock ripple firm risk spare
ivory | 22) want asset undo ensure leg wine
museum journey grunt rice shrimp nut |
| 23) seat stool cattle flame slim rotate
grass elbow unfold soldier harsh lawn | 24) whale water comic opinion brother
brisk enjoy electric ordinary broken
great update |
| 25) under cart jewel utility strategy
industry judge hotel cancel quality
able cigar | 26) airport vast keep glory vote
despair jacket candy hen place pass
roast |

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GENERATED BIP39 MNEMONICS

27) paddle harbor polar bulk start
shell inquiry nose rural rapid pole
mammal

29) broom arm hurt thrive document work
weekend situate manage retreat mansion
cement

31) second shaft wisdom list high
morning weird hand devote gold mistake
disease

33) thing document thrive mouse cat
year order able frost absurd leave
dinner

35) erosion wide unlock iron robust
radar nurse chat fuel unveil awful mail

37) bottom smart often helmet merit
review truck rival doll relax kit faint

39) awake flag inch solid vacant
universe island relief cake midnight
sudden draft

41) awake team fatal art income item
tornado boring crime orchard advance
shallow

43) meat rare bridge move foam hour pen
sense stereo name smoke weapon

45) home imitate garment income gain
deposit cube volcano window load better
near

47) output fetch cloud ugly inflict
town armed play trigger rich ranch more

49) short oil repair strong flash
gorilla struggle topic patch shrimp
render welcome

51) casual capital outer muscle reveal
stick organ decrease spirit tip
broccoli thought

28) unaware vacant world grass pepper
portion satisfy grace debate base wrist
odor

30) obtain dial wrestle zero wink
health issue lens abstract awesome post
arrest

32) tobacco trade hurt sustain mechanic
target frame warrior tissue moment
process tide

34) display quit ritual enjoy avoid
tornado mixture swallow sound icon ask
spoil

36) december spot short auction episode
bullet plastic old annual ahead between
tortoise

38) satoshi rural ivory rude town
victory involve spring library arena
furnace sun

40) credit choice dinner glide enter
bitter egg spoon toilet catalog fatal
follow

42) rough slam vendor vocal medal word
ankle share under coral tuna ordinary

44) six sheriff rookie anger shop
method drink save salad promote absent
where

46) evidence answer piece ocean razor
rent truly hungry vibrant uncle jeans
near

48) popular drill ring unfold crunch
purity neck lazy thunder castle glimpse
surprise

50) club pigeon pave focus moon oyster
planet machine supply silk report end

52) fury vanish impact nuclear tool
genre board narrow industry equal
panther refuse

SEE ALSO

- [MEV: Maximal Extractable Value Explained — BIP39 Seed Phrases \(June 11, 2026\) \(2026-06-11\)](#)
- [Proof of Work vs Proof of Stake: A Comprehensive Comparison — BIP39 Seed Phrases \(April 08, 2026\) \(2026-04-08\)](#)
- [How Decentralized Exchanges \(DEXs\) Work — BIP39 Seed Phrases \(March 31, 2026\) \(2026-03-31\)](#)
- [Introduction to On-Chain Analytics — BIP39 Seed Phrases \(June 09, 2026\) \(2026-06-09\)](#)

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