# The Rise of Blockchain-Based Prediction Markets

by Anchit Jain



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*The Rise of Blockchain-Based Prediction Markets*

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# Introduction

One of the most upcoming applications of blockchain technology is in Decentralized Prediction Markets (DPMs), which allow users to bet on the outcomes of future events. These DPM platforms operate without central authority, enhancing transparency, security, and resistance to censorship (Matmuller, 2024).

# How Decentralized Prediction Markets Work

DPMs enable users to make predictions by buying and selling tokens representing possible outcomes of an event. The value of these tokens fluctuates based on market consensus, reflecting the likelihood of each outcome.

At the core of DPMs are smart contracts and oracles (Peterson et al., 2019). Smart contracts are self-executing contracts with the terms directly written into code, which automatically enforce and execute the agreement when predefined conditions are met. Oracles serve as

bridges between the blockchain and the real world, providing smart contracts with external data necessary to determine outcomes.

In a DPM, participants buy and trade tokens representing different outcomes of an event. For instance, in a sports match prediction, users might buy tokens for "Team A wins" or "Team B wins". The price of these tokens fluctuates based on market demand and supply, reflecting the collective belief in the likelihood of each outcome .

When the event concludes, the oracle provides the result to the smart contract, which then redistributes the pooled funds to the holders of the winning outcome tokens. This mechanism ensures transparency and fairness, as the entire process is governed by code rather than a central authority.
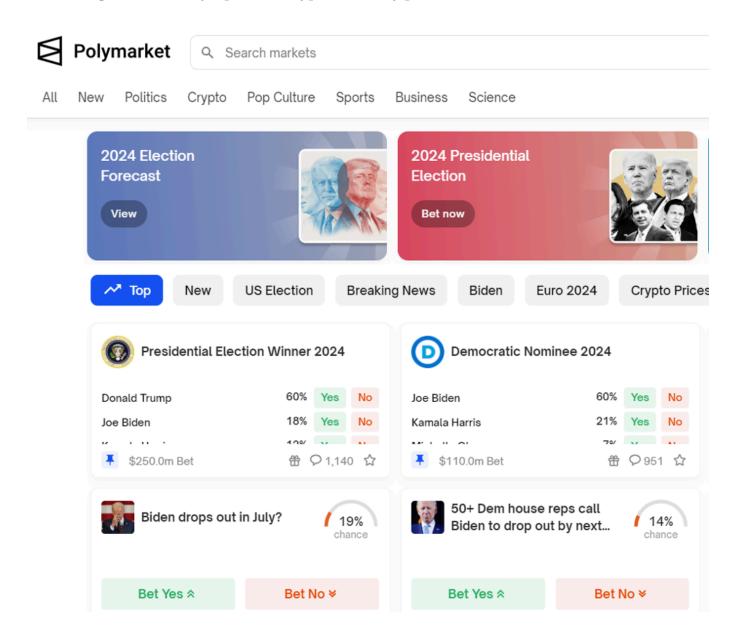
## Advantages of Decentralized Prediction Markets

There are several advantages to decentralized prediction markets over traditional centralized prediction markets (Clear Chain Capital, 2021):
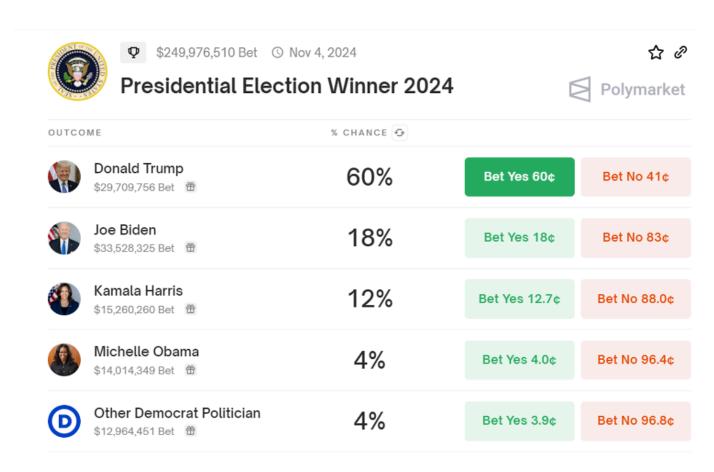
- **Transparency and Trust:** DPMs operate on public blockchains, ensuring that all transactions and outcomes are transparent and tamper-proof. This reduces the risk of fraud and manipulations common in traditional betting platforms.
- **Fair Odds:** Unlike traditional bookmakers who set odds and may adjust them to their advantage, odds in DPMs are determined purely by market dynamics. This can lead to more favorable payouts for participants.
- **Lower Costs:** By eliminating intermediaries, DPMs reduce the costs associated with traditional betting and trading platforms. This not only lowers entry barriers but also increases potential returns for users.

# Polymarket: A Case Study

One of the leading DPM platforms today is Polymarket. It is built on the Ethereum sidechain Polygon and uses the Universal Market Access (UMA) oracle. It allows users to bet on various topics, such as political events (e.g. the upcoming US elections) or sports events (e.g. the 2024 Olympics) or cryptocurrency prices.

In the last few months, Polymarket has shown significant activity in the run-up to the US presidential elections in November, with new markets emerging on odds of President Joe Biden's potential withdrawal from the race. As of July 12th 2024, there are ~$250m worth of bets in "Presidential Election Winner 2024," which consists of individual "Yes" or "No" bets across 17 possible contenders. Donald Trump is currently the favorite, with 60% odds that he will win the U.S. election, with a total of $29.7m in bets for and against him. Joe Biden and Kamala Harris have $33.5m and $15.3m in bets for and against them.



| OUTCOME | % CHANCE | | |
|---|---|---|---|
| Donald Trump $29,709,756 Bet | 60% | Bet Yes 60¢ | Bet No 41¢ |
| Joe Biden $33,528,325 Bet | 18% | Bet Yes 18¢ | Bet No 83¢ |
| Kamala Harris $15,260,260 Bet | 12% | Bet Yes 12.7¢ | Bet No 88.0¢ |
| Michelle Obama $14,014,349 Bet | 4% | Bet Yes 4.0¢ | Bet No 96.4¢ |
| Other Democrat Politician $12,964,451 Bet | 4% | Bet Yes 3.9¢ | Bet No 96.8¢ |

Presidential Election Winner 2024 — $249,976,510 Bet — Nov 4, 2024 — Polymarket

Political bets make up ~70% of all Polymarket activity, with bets ranging from $1,000 to $100,000. Monthly user inflow in June 2024 hit 29,432, with 3,590 daily active traders adjusting bets. Open interest grew to over $46M, and daily trading volume reached $4.6M (The Crypto Times, 2024).

# The Path Ahead

The path ahead for decentralized prediction markets (DPMs) is poised with promising advancements and emerging trends. As blockchain technology continues to evolve, several key areas are likely to shape the future of DPMs:

- Enhanced Liquidity Solutions: Currently, there is lack of liquidity in DPMs, leading to challenges in market entry and exit. In future, with the integration of Automated Market Makers (AMMs) and other liquidity protocols, DPMs would be able to attract more participants and larger bets.
- Advanced Oracle Systems: The reliability and accuracy of oracles are paramount. Polymarket recently had an incidence where it had to overrule its oracle UMA on a wager relating to memecoin $DJT. In future, innovations such as cross-verification among multiple oracles can enhance the robustness of data feeding into smart contracts.
- Regulatory Frameworks: Navigating the regulatory landscape will be essential for the mainstream adoption of DPMs. In 2022, Polymarket was subject to enforcement action by the Commodity Futures Trading Commission (CFTC) over some non-compliant contracts and had to eventually pay a penalty. Collaborative efforts between industry stakeholders and regulatory bodies can help establish clear guidelines that balance compliance with the decentralized ethos.
- Interoperability and Scalability: Future DPM platforms are expected to leverage interoperability between different blockchain networks to expand market reach and scalability. Utilizing layer-2 solutions and cross-chain protocols can address scalability issues and enhance transaction throughput, making DPMs more efficient and accessible.
- Expansion of Market Types: The scope of prediction markets will continue to diversify, covering an array of events from traditional financial instruments to novel areas such as climate change, pandemics, and societal trends. This diversification can tap into new user segments and drive growth in market participation.

As these trends unfold, decentralized prediction markets have the potential to redefine the landscape of betting and forecasting.

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