



# Prediction Markets as Societal Signals



Understanding Collective Beliefs about the Future



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MAX PLANCK INSTITUTE  
FOR SOFTWARE SYSTEMS

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# Who Am I?



## Computer Scientist

- Bachelor (UFOP), Master (UFMG), and PhD (MPI-SWS) in Computer Science



## Vast academic experience

- UFOP, UFMG, ELTE, MPI-SWS, and vast publication record



## Vast industrial experience

- Kunumi AI, Chainlink Labs, Matter Labs



## Taught and organized classes and seminars

- EEDS, UFOP, UFMG, UoS/MPI-SWS, and RPTU

# Socially Disruptive Systems

## Research interests



## Social Computing

- Vast topics of interest and publications.



## AI & Society

- Most innovative ML health software in Brazil by IT Forum 365, promoted by PwC and ITMidia.



## Decentralized Systems

- Vast topics of interests and publications..

# Before We Start!



# Before We Start!



# Prediction Markets



## Prediction Markets

- Platforms where people **bet on what they think will happen**.
- The price reflects the **collective expectation** of an outcome.
- Think of it as a **real-time poll with money at stake**.



## Collective beliefs

- Participants bring **different information, opinions, and experiences**.
- Prices summarize these into a **shared belief about the future**.
- Changes in price show how **public expectations evolve over time**.



## Who can participate?

- Open to a **broad set of individuals** (depending on the platform).
- People participate because they **care about the topic or expect to profit**.
- No formal expertise required, **incentives reveal informed views**.



## How prices are formed

- Prices move as people **buy and sell based on new information**.
- When news arrives, **participants update their beliefs**, and prices shift.
- A price (e.g., 70%) can be read as **“the crowd thinks this is 70% likely.”**



## Outcomes & incentives

- Markets resolve based on **verifiable real-world outcomes**.
- Correct predictions are **financially rewarded**. Those who predicted well **gain**, others **lose**.
- Markets are settled based on what **actually happens in the real world**.
- This creates incentives to **seek accurate information**.

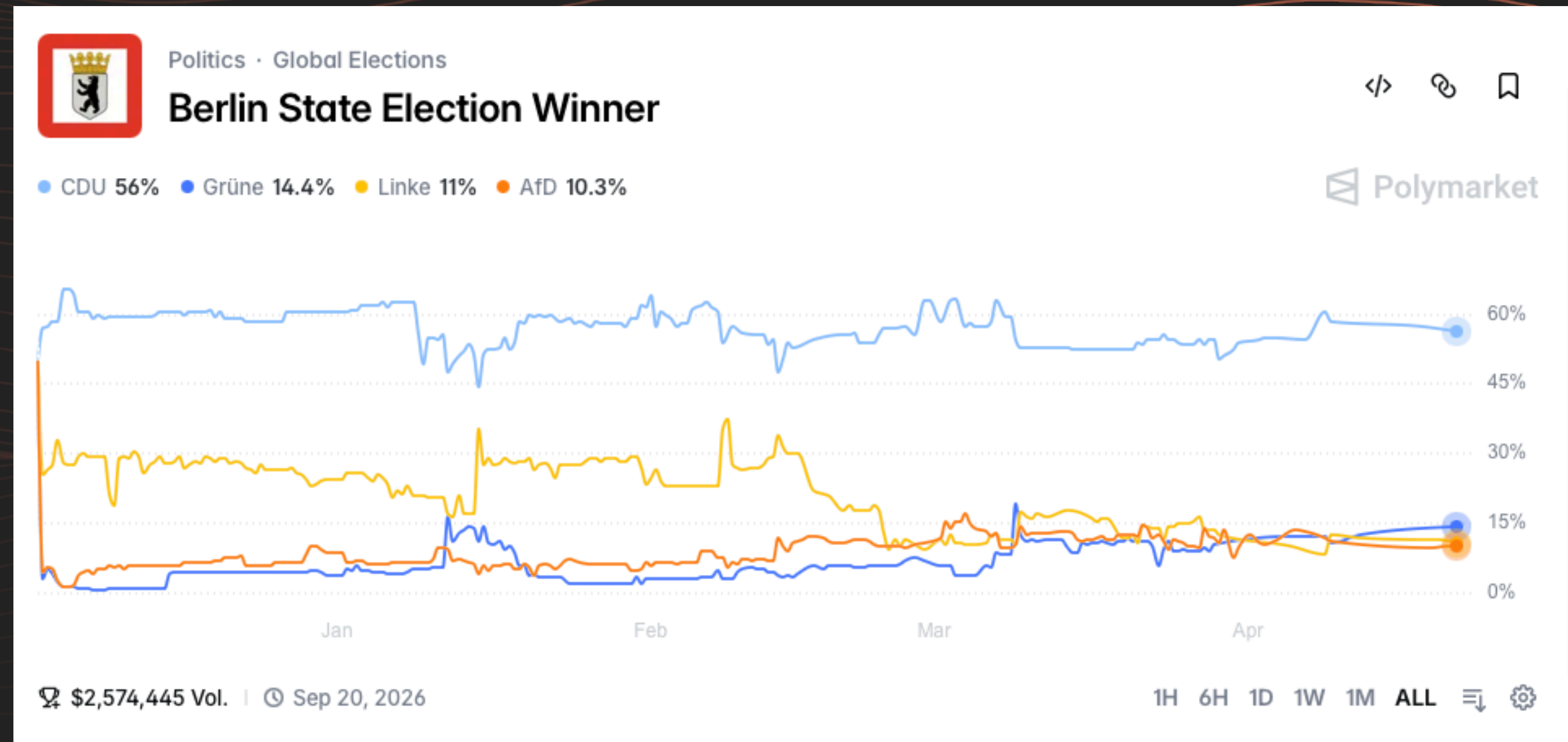
Good for

Measuring collective beliefs

Beyond surveys and polls

Studying information and behavior

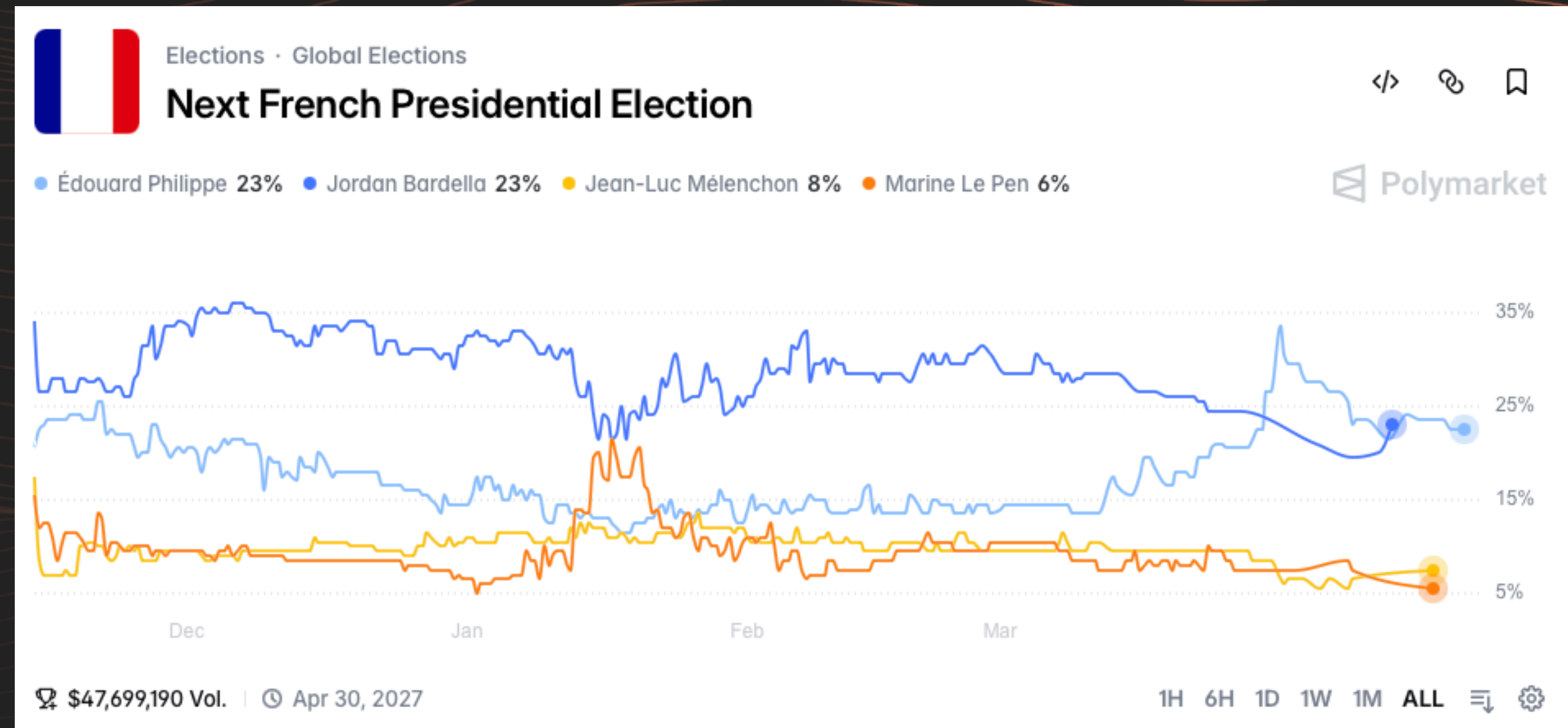
# Example of Events



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# Example of Events

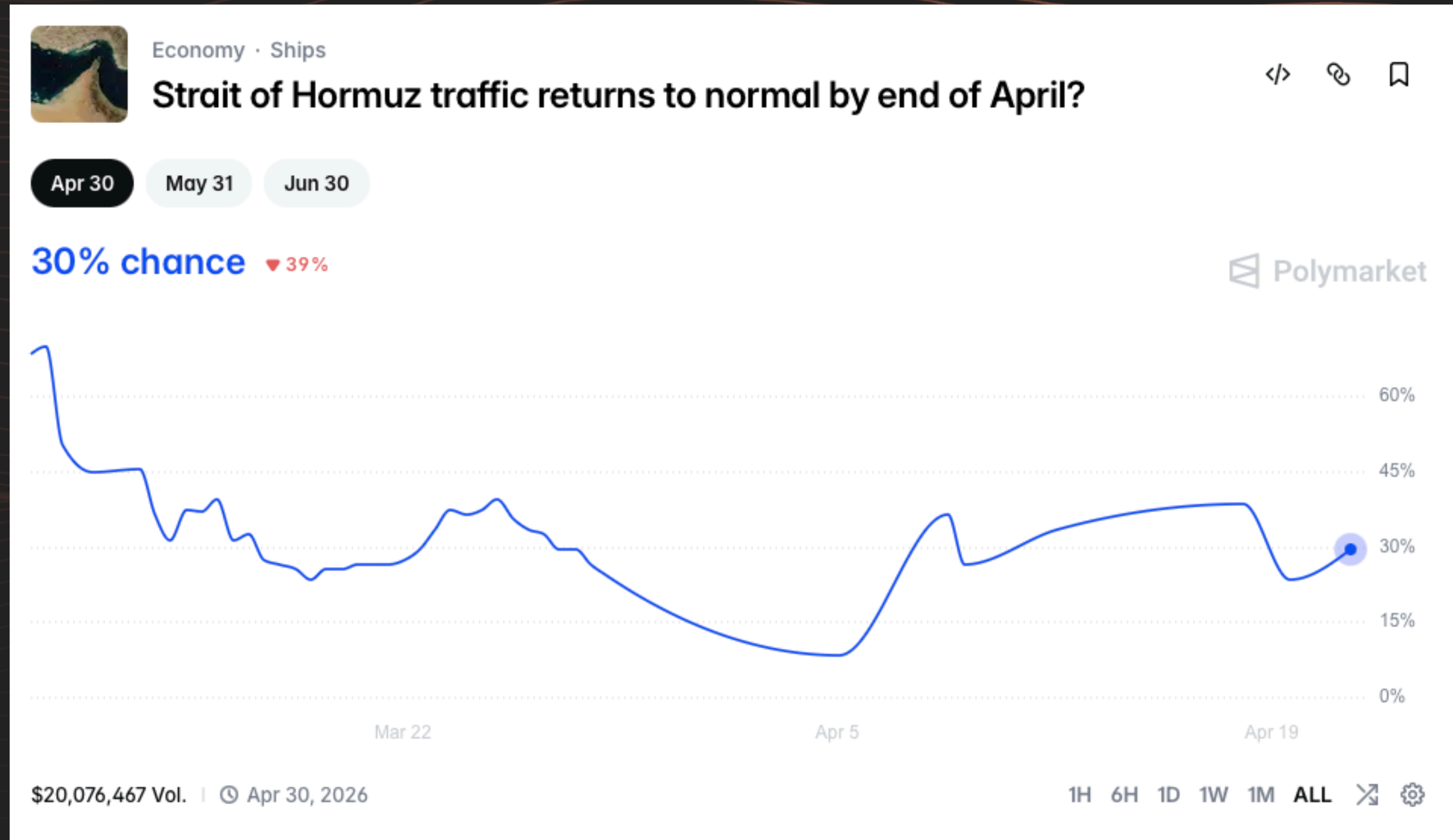




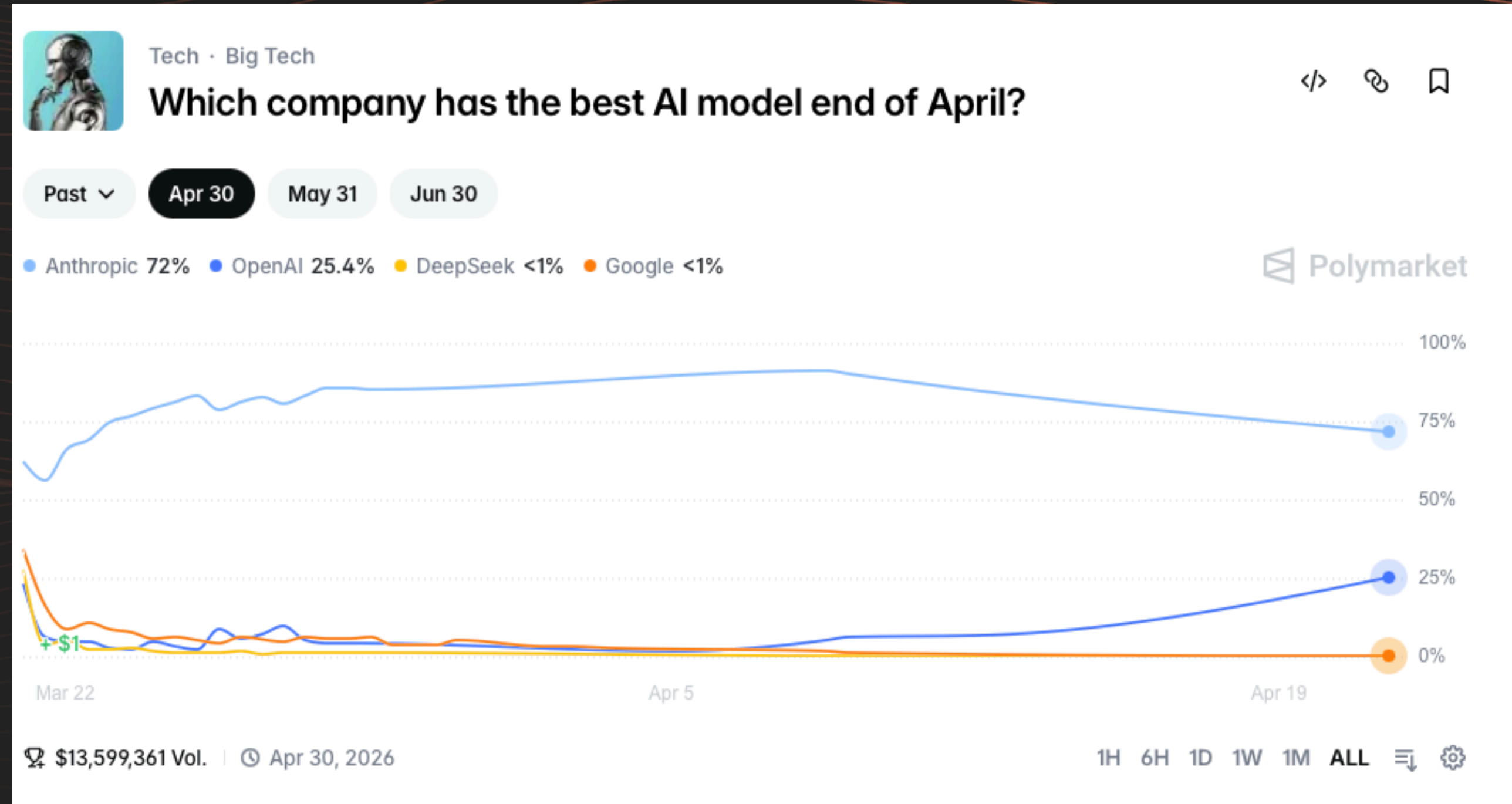
# Example of Events



# Example of Events



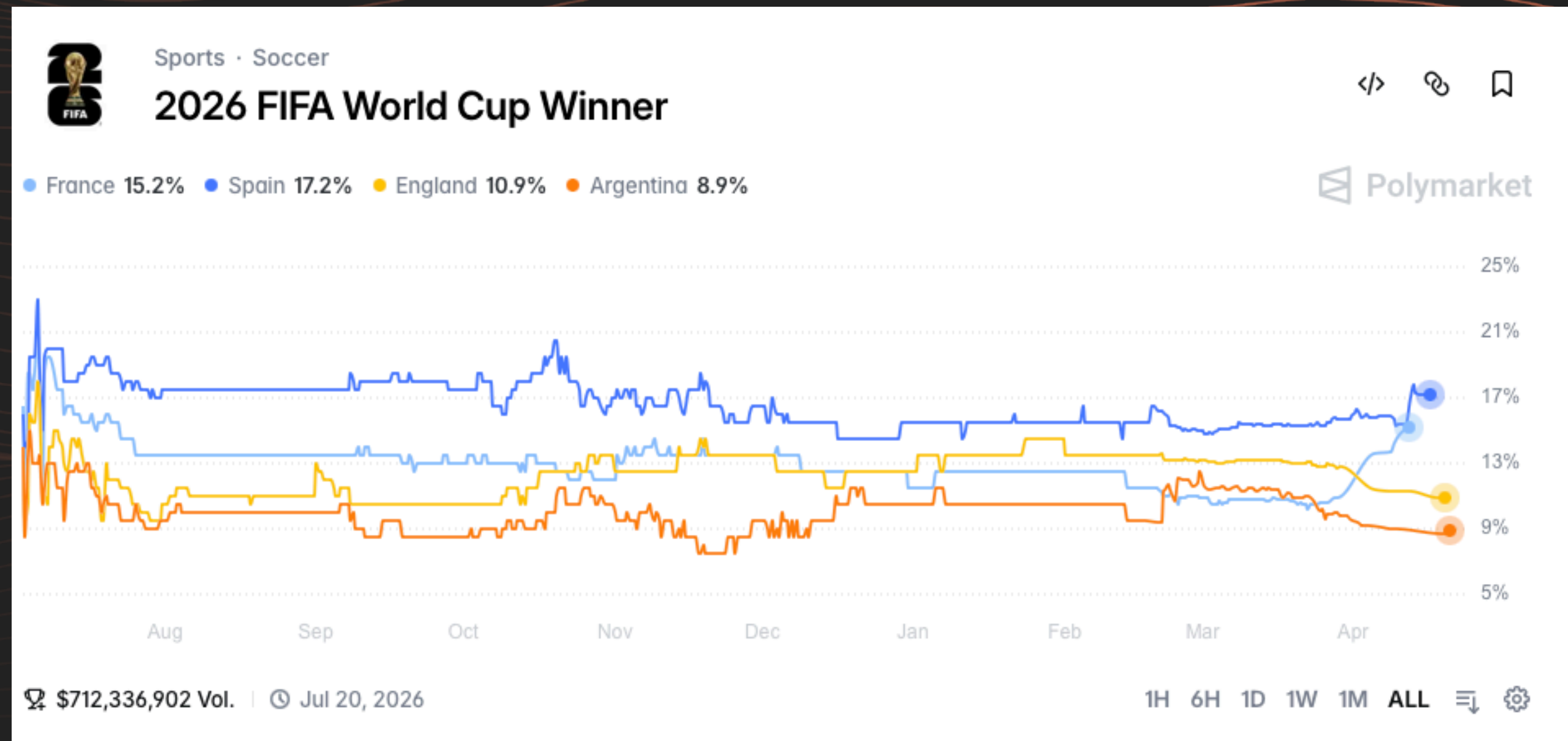
# Example of Events



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# Example of Events





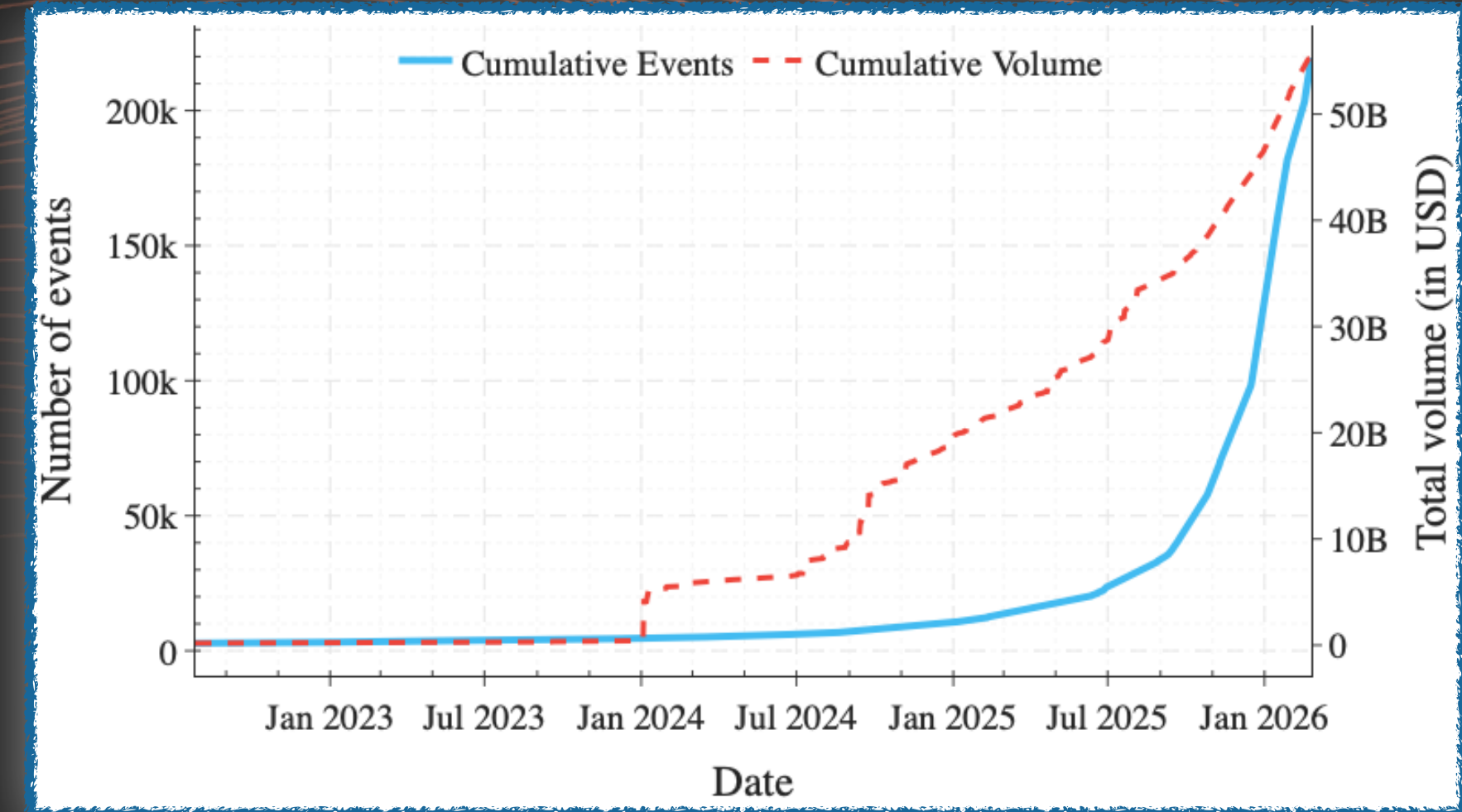
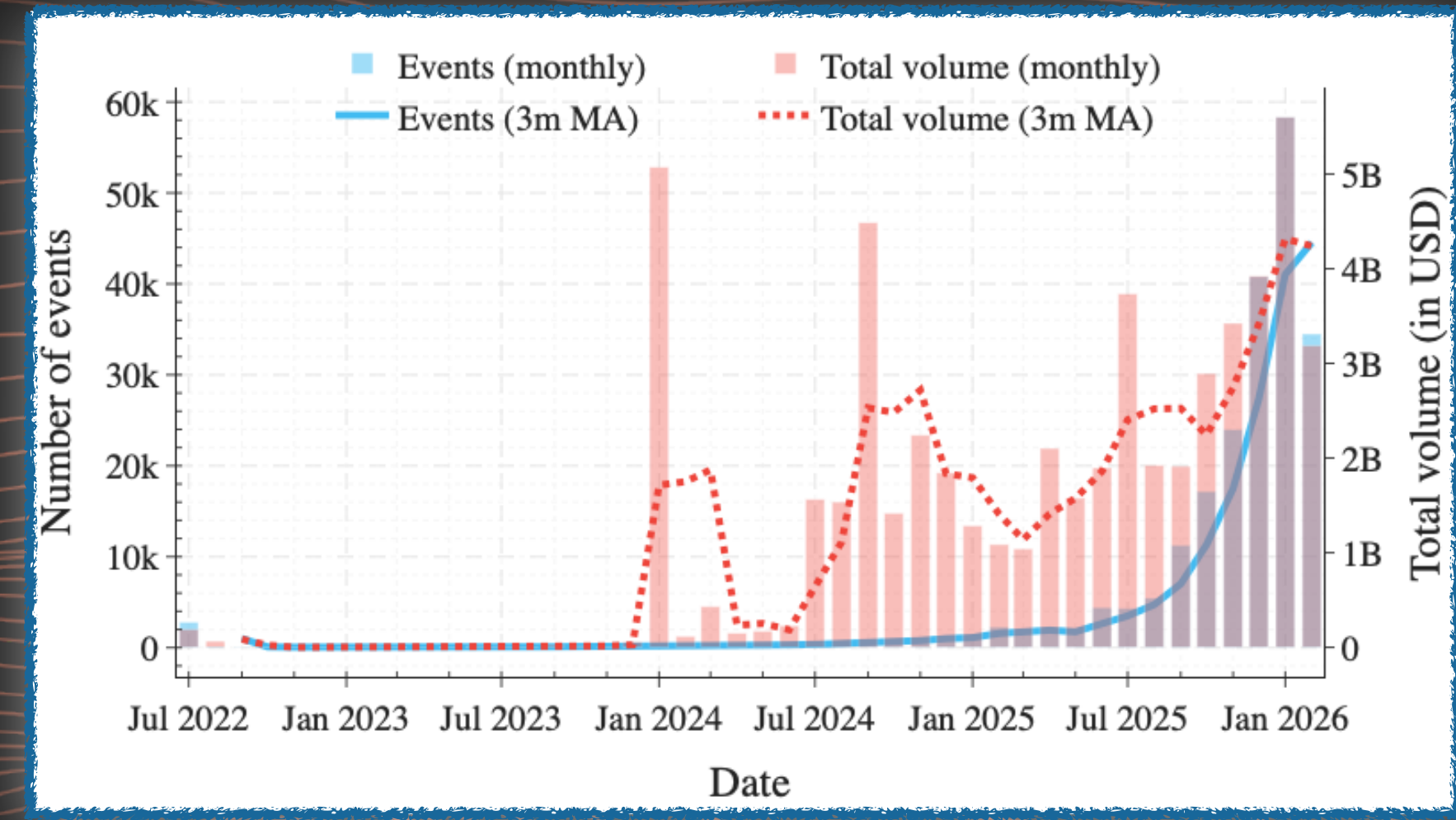
Time span  
Oct. 2020 — Feb. 2026

Events  
**219,526**  
96.48% resolved

Markets  
**527,068**

Total volume  
**55 billion USD**

Time series  
Over a million  
**minute-interval**



# Key Research Questions



## 1. Can we trust prediction market prices?

- Do prices accurately reflect **true probabilities** (calibration & accuracy)?
- How reliable are these signals across different domains (e.g., politics vs. sports)?

## 2. Who drives market outcomes?

- Are prices shaped by **diverse participants** or dominated by **wealthy actors**?
- When does the **“wisdom of the crowd”** become the **power of the few**?

## 3. How does information influence beliefs?

- How do **news, events, and narratives** shift market expectations?
- Can we measure **belief updates** in response to new information?

## 4. Do markets only predict or also influence outcomes?

- Can strong market signals create **bandwagon or strategic effects**?
- Do markets merely **reflect reality, or actively shape it**?

# Let's Connect

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