

Lecture 11:
CS 5306 / INFO 5306:
Crowdsourcing and
Human Computation

Amazon Mechanical Turk

- Do the “Amazon Mechanical Turk account set-up poll” on Piazza

Readings

- Today: *Infotopia*, Chapter 4
- Thursday (March 10): *Infotopia*, Chapter 5
- Tuesday (March 15): *Infotopia*, Chapter 6

The complexity of price discovery in an efficient market: the stock market reaction to the Challenger crash[☆]

Michael T. Maloney^{a,*}, J. Harold Mulherin^{b,1}

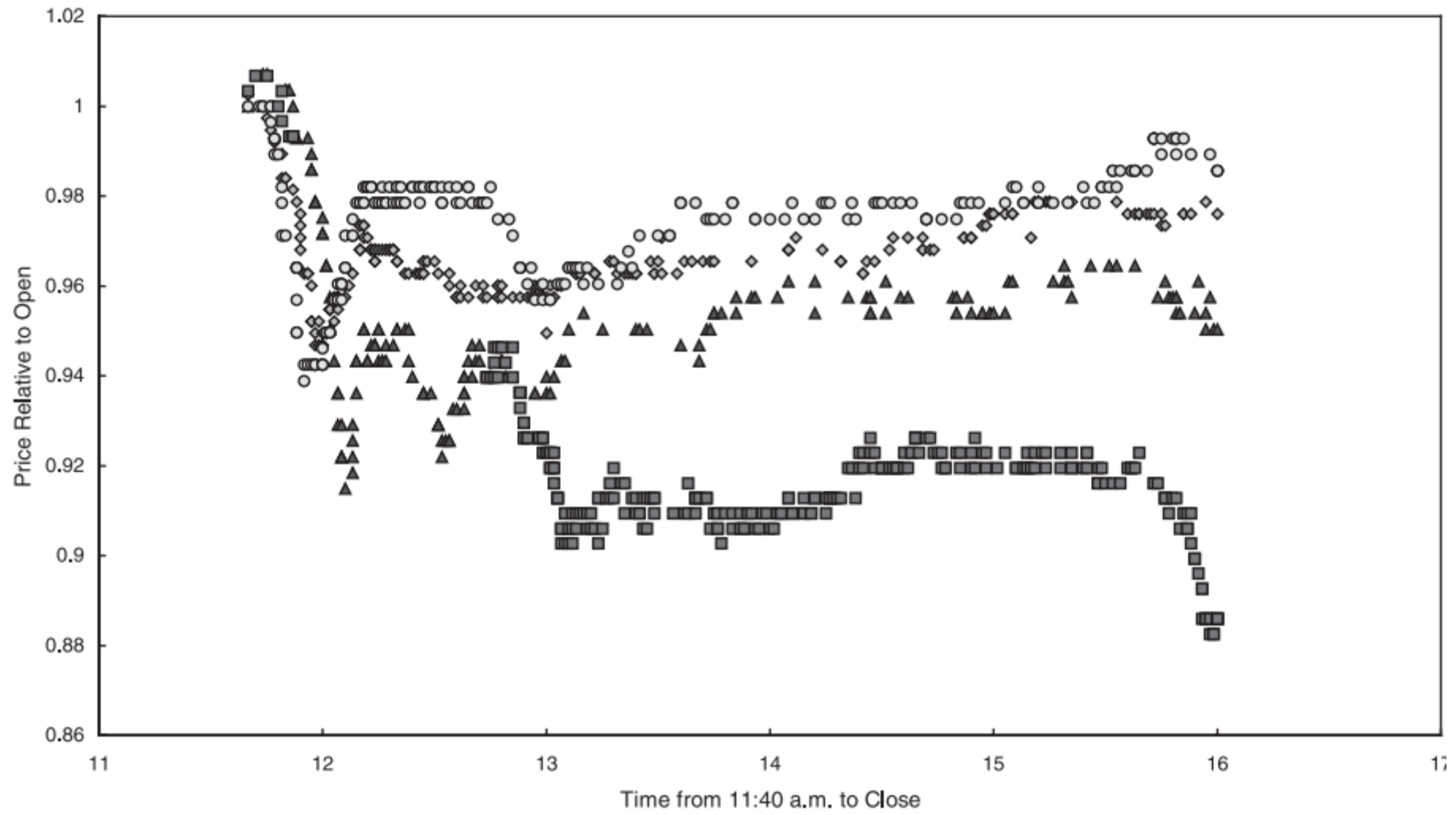
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^b*Department of Economics, Claremont McKenna College, Claremont, CA 91711, USA*

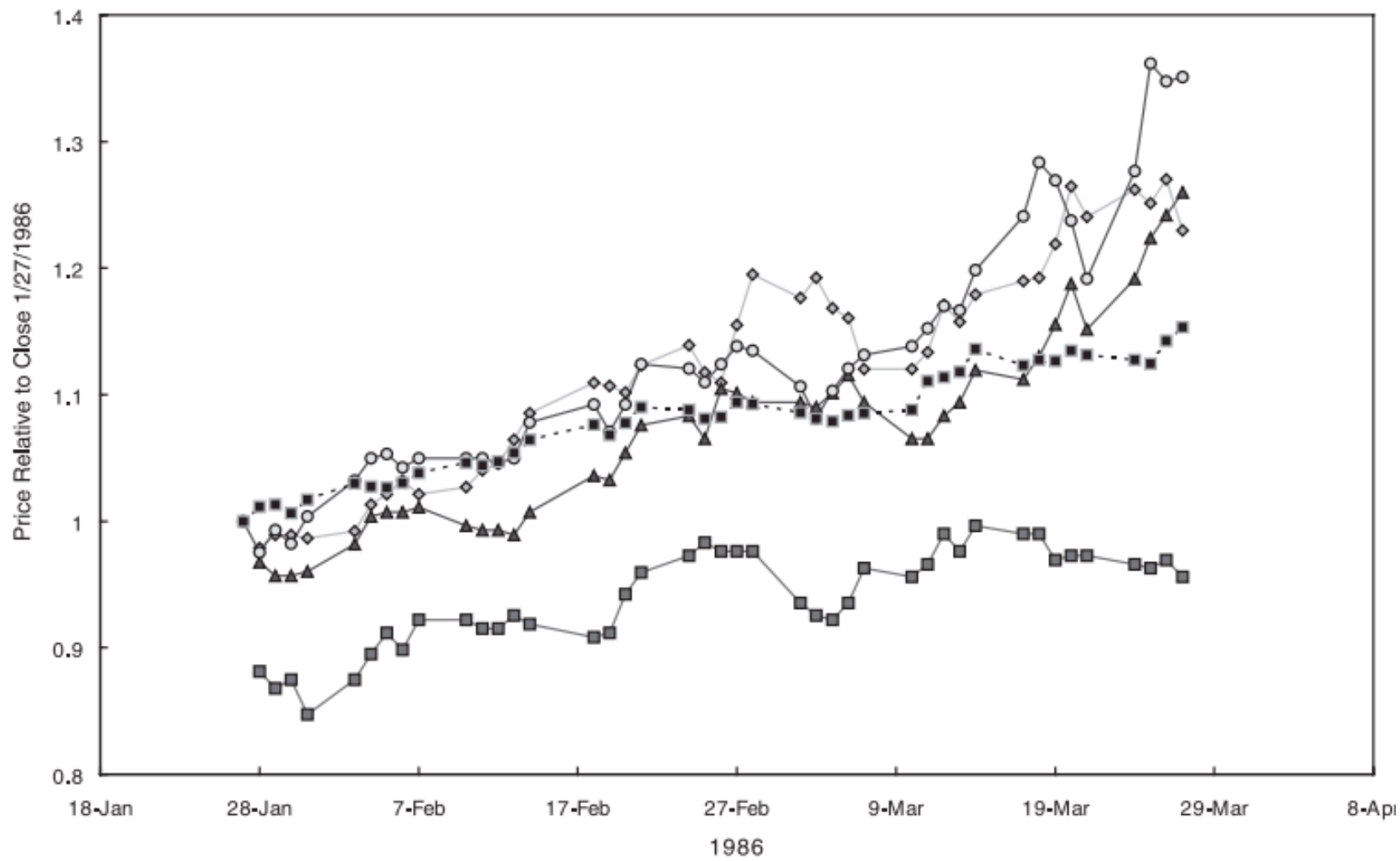
Received 15 November 2001; received in revised form 8 February 2002; accepted 12 July 2002

Abstract

We provide evidence on the speed and accuracy of price discovery by studying stock returns and trading volume surrounding the crash of the space shuttle Challenger. While the event was widely observed, it took several months for an esteemed panel to determine which of the mechanical components failed during the launch. By contrast, in the period immediately following the crash, securities trading in the four main shuttle contractors seemingly singled out the firm that manufactured the faulty component. We show that price discovery occurred without large trading profits and that much of the price discovery occurred during a trading halt of the firm responsible for the faulty component. Finally, although we document what are arguably quick and accurate movements of the market, we are unable to detect the actual manner in which particular informed traders induced price discovery.



◆ Lockheed ▲ Martin Marietta ○ Rockwell ■ Morton-Thiokol



—◇— Lockheed —▲— Martin Marietta —■— Morton Thiokol —○— Rockwell - - - ♦ - - - Dow Jones Index

Parimutuel Betting in Horse Racing

- Tote board:



RACE NO	2	MINUTES TO POST	8			
APPROXIMATE ODDS						
1	4	5	7	9	10	13
2	9-2	6	17	10	5-2	14
3	25	7		11		15
4	13	8	4	12		16

Parimutuel Betting in Horse Racing

- Horse h_1, \dots, h_n
- Total wagers for each horse w_1, \dots, w_n
- Total wagers across all horses $W = \sum_{i=1}^n w_i$
- House take $r \times W$ ($r = \sim 17\%$)
- Each horse h_i returns $\frac{(1-r) \times W}{w_i}$ per dollar if it wins

Parimutuel Betting in Horse Racing

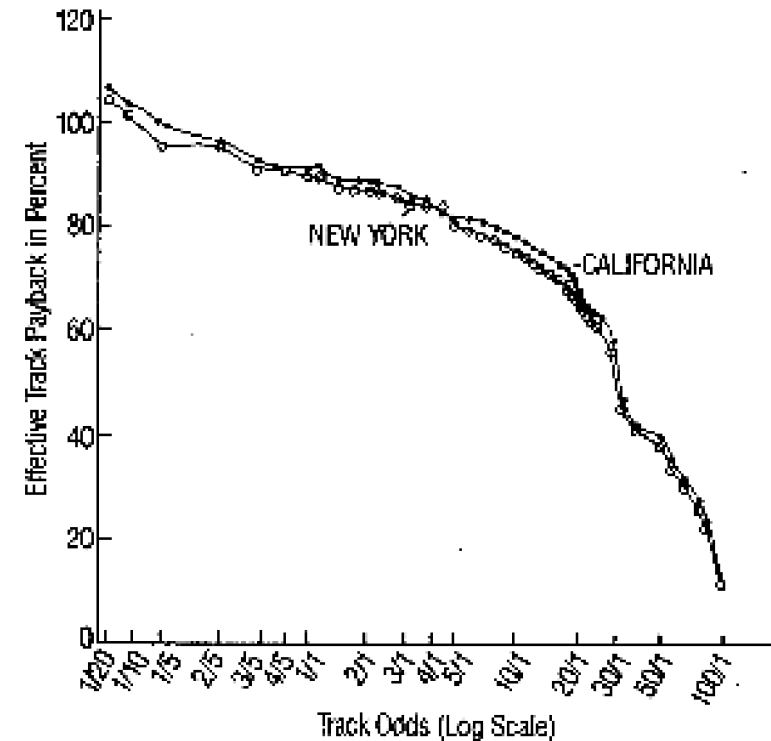
- Gamblers (collectively) are good predictors of race outcomes

No. of Entries	No. of Races	Odds Rank of Horse											
		1	2	3	4	5	6	7	8	9	10	11	12
5	69	2.1	2.4	2.9	3.4	4.1							
6	181	2.2	2.9	3.2	3.6	4.2	4.9						
7	312	2.8	3.2	3.7	4.0	4.3	4.6	5.4					
8	352	2.8	3.2	3.9	4.2	4.7	5.1	5.7	6.4				
9	283	3.1	3.6	4.1	4.6	5.1	5.3	6.0	6.4	7.1			
10	241	3.1	4.0	4.3	5.1	5.3	5.6	6.2	6.5	7.0	7.9		
11	154	3.8	4.0	4.7	5.2	5.7	5.8	6.3	6.9	7.2	7.8	8.5	
12	233	3.9	4.6	5.1	5.4	6.0	6.2	6.7	7.2	7.6	7.7	8.7	9.1

Source: Hoerl and Fallin (1974); data are from all 1,825 races run at Aqueduct and Belmont Park (NY) in 1970.

Parimutuel Betting in Horse Racing

- Humans are biased estimators
- Favorite Long-Shot Bias: People have a preference away from low-return bets and toward “long shots”



Ziembra and Hausch 1986

Parimutuel Betting in Horse Racing

- Favorite Long-Shot Bias Explanations:
 - Cognitive:
 - Misestimating probabilities
 - Preference for risks
 -
 - Economic:
 - Large bettors would damage their return if they bet all on one horse
 - “Insider” bookmakers placing bets to entice bets on losers
 -

Prediction Markets: Intuition

- Imagine you owned a “stock” that flips a (fair) coin on March 9, 2016, and gives you \$10 if it’s heads and \$0 otherwise.

Prediction Markets: Intuition

- Imagine you owned a “stock” that flips a (fair) coin on March 9, 2016, and gives you \$10 if it’s heads and \$0 otherwise.
- Would you sell it if someone offered you
 - \$7?

Prediction Markets: Intuition

- Imagine you owned a “stock” that flips a (fair) coin on March 9, 2016, and gives you \$10 if it’s heads and \$0 otherwise.
- Would you sell it if someone offered you
 - \$7?
 - \$3?

Prediction Markets: Intuition

- Imagine you owned a “stock” that flips a (fair) coin on March 9, 2016, and gives you \$10 if it’s heads and \$0 otherwise.
- Would you buy it if someone offered to sell it at
 - \$7?
 - \$3?

Prediction Markets: Intuition

- Imagine you owned a “stock” that flips a *biased* coin on March 9, 2016, and gives you \$10 if it’s heads and \$0 otherwise (and you don’t know the bias).

Prediction Markets: Intuition

- Imagine you owned a “stock” that flips a *biased* coin on March 9, 2016, and gives you \$10 if it’s heads and \$0 otherwise (and you don’t know the bias).
- Imagine you could flip the coin 10 times before deciding, and it came up heads 8 times and tails 2 times

Prediction Markets: Intuition

- Imagine you owned a “stock” that flips a *biased* coin on March 9, 2016, and gives you \$10 if it’s heads and \$0 otherwise (and you don’t know the bias).
- Imagine you could flip the coin 10 times before deciding, and it came up heads 8 times and tails 2 times
 - How much would you sell this stock for?
 - How much would you buy this stock for?
 - = *Price* of the stock

Prediction Markets: Intuition

- Imagine you owned a “stock” that flips a *biased* coin on March 9, 2016, and gives you \$10 if it’s heads and \$0 otherwise (and you don’t know the bias).
- Imagine 100 people (including you) owned this stock, and each gets a (private) opportunity to flip the coin 10 times before setting a price
- What would you buy/sell the stock for? Would you get it?

Predict Markets

- Traditional stock market:
 - Buy and sell pieces of companies
 - Prices reflects collective sense of the value of the companies
- Prediction markets:
 - Buy and sell stocks whose value is determined by some unknown future event
 - Example: A stock that pays \$10 if the Republican candidate wins the US Presidency

What is the IEM?

The IEM is an online futures market where contract payoffs are based on real-world events such as political outcomes, companies' earnings per share (EPS), and stock price returns. The market is operated by University of Iowa Henry B. Tippie College of Business faculty as an educational and research project. [More...](#)

[Who can participate in the IEM?](#)

[Are the participants playing with real money?](#)

[Can markets predict the future?](#)

[Can I get historical data from the IEM?](#)

[How do I start trading?](#)

[I need more information about the IEM...](#)

IEM in the News

[View All](#)

- | | |
|-------------------|--|
| February 1, 2016 | Iowa Caucuses Throw Presidential Predictions into a Tizzy: Cruz Upsets Trump |
| January 29, 2016 | Iowa Nomination Betting Market Opens |
| January 27, 2016 | Iowa Electronic Markets Opens Presidential Predictions |
| November 12, 2015 | See? I Was Right |

 [SEARCH](#)

Current Markets

2016 U.S. Presidential Election Markets



On Wednesday, November 19, the IEM opened markets in the 2016 U.S. Presidential Election markets. The IEM 2016 U.S. Presidential Election Markets are real-money futures markets where contract payoffs will be determined by the popular vote cast in the 2016 U.S. Presidential Election.

[Overview](#) [Prospectuses](#) [Data](#)

2016 U.S. Congressional Election Markets



On Wednesday, November 19, The IEM opened a market in the 2016 U.S. Congressional elections. The IEM 2016 Congressional Control market is a real-money futures markets where contract payoffs will be determined by the outcomes of the 2016 U. S. Congressional elections.

Market PRES16_STA

- You pay \$1
- You get two “assets”
 - DEM16_WTA – pays off \$1 if Democrat wins
 - REP16_WTA – pays off \$1 if Republican wins
- Only 1 option will win, so the market pays out the same amount that it takes in
- You can sell the “assets” independently

Market Information: PRES16_WTA

| [Assets](#) | [Bundles](#) | [Prospectus](#) | [Price History](#) | [Graph](#) | [Other Information](#) |

**** You must read the prospectus before trading ****

Market:

Name: PRES16_WTA
Description: 2016 US Presidential Election Winner-Takes-All Market
Open Date: 11/19/14 11:30 AM
Close Date:

Assets:

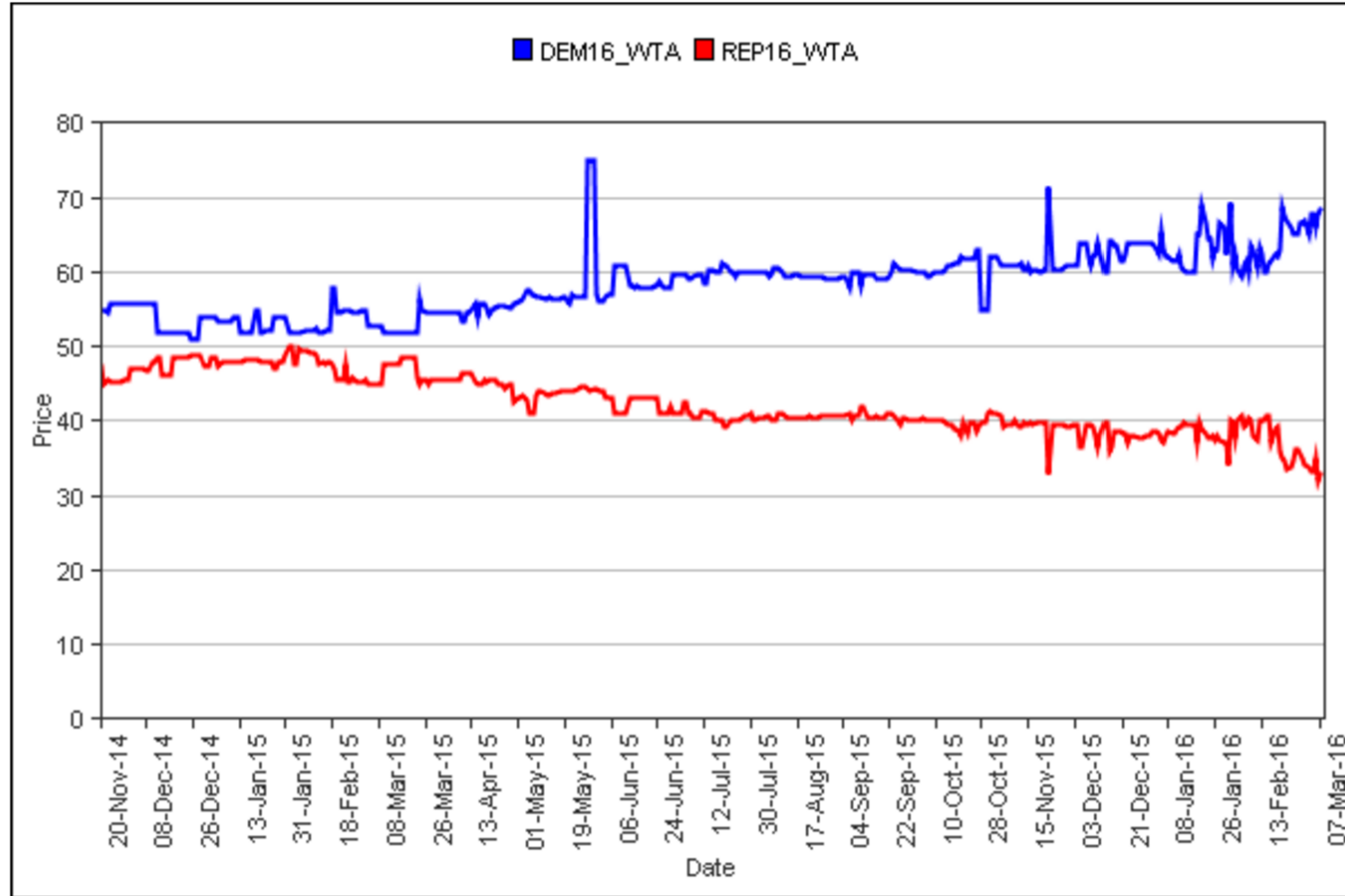
Name	Description
DEM16_WTA	\$1 if the Democratic Party nominee receives the majority of popular votes cast for the two major parties in the 2016 U.S. Presidential election, \$0 otherwise
REP16_WTA	\$1 if the Republican Party nominee receives the majority of popular votes cast for the two major parties in the 2016 U.S. Presidential election, \$0 otherwise

Bundles: (To buy or sell bundles, select the bundle from the -Market Orders- list in your trading console. You may need to use the slide bar on the select box to see the bundle names.)

Name	BundleType	Price	Net Issued	Description
PRES16_WTA	Fixed Price	1.000	22,647	One of each contract in the PRES16_WTA market
PRES16_WTA	Market Price			One of each contract in the PRES16_WTA market

Pres16_WTA

2016 US Presidential Election Winner Takes All Market



Market Information: PRES16_VS

| [Assets](#) | [Bundles](#) | [Prospectus](#) | [Price History](#) | [Graph](#) | [Other Information](#) |

**** You must read the prospectus before trading ****

Market:

Name: PRES16_VS
Description: 2016 US Presidential Vote Share Market
Open Date: 11/19/14 11:30 AM
Close Date:

Assets:

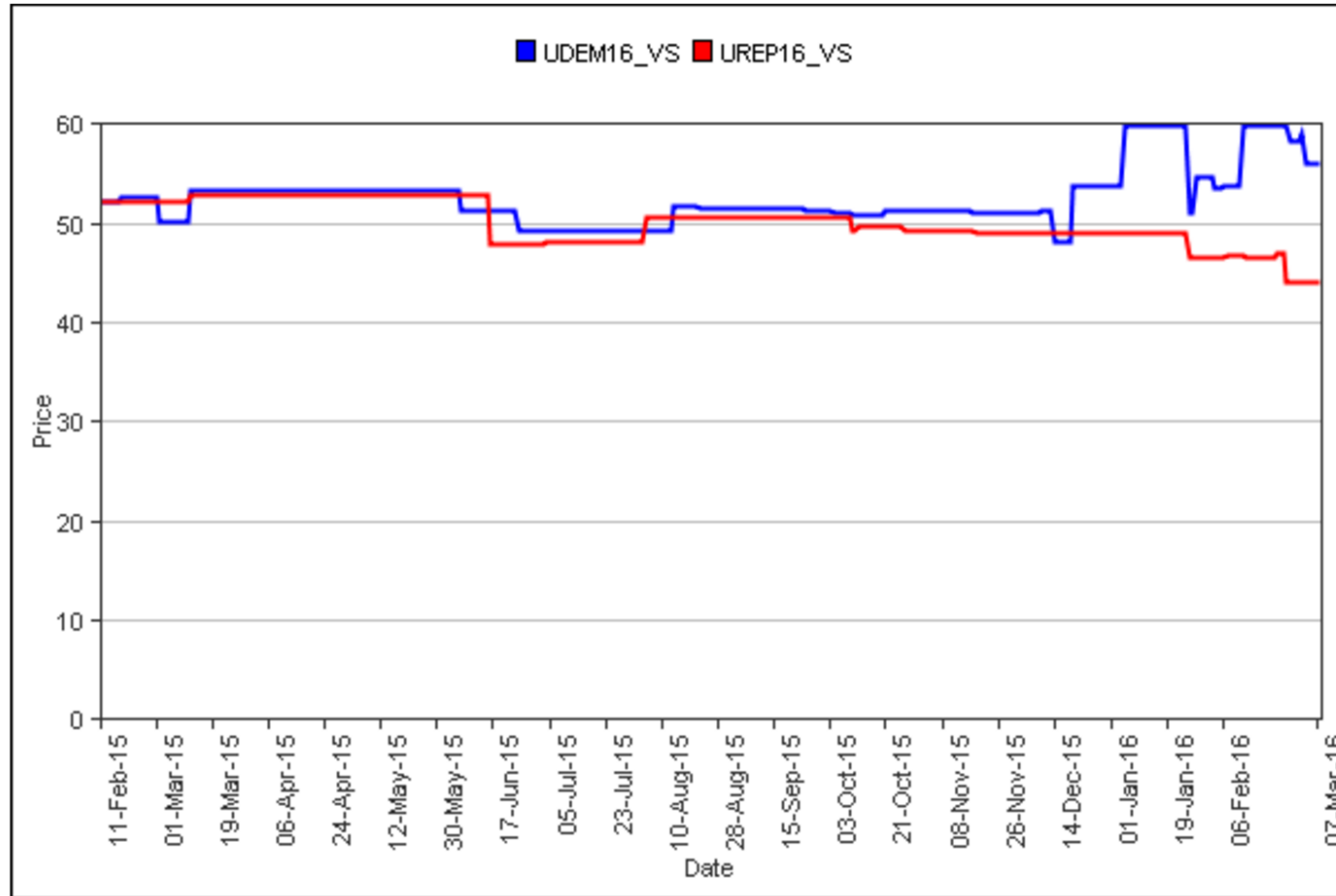
Name	Description
UDEM16_VS	\$1 times the Unnamed Democratic Nominee share of the two-party popular vote in the 2016 U.S. Presidential election
UREP16_VS	\$1 times the Unnamed Republican Nominee share of the two-party popular vote in the 2016 U.S. Presidential election

Bundles: (To buy or sell bundles, select the bundle from the -Market Orders- list in your trading console. You may need to use the slide bar on the select box to see the bundle names.)

Name	BundleType	Price	Net Issued	Description
PRES16_VS	Fixed Price	1.000	1,974	One of each contract in the PRES16_VS market
PRES16_VS	Market Price			One of each contract in the PRES16_VS market

Pres16_VS

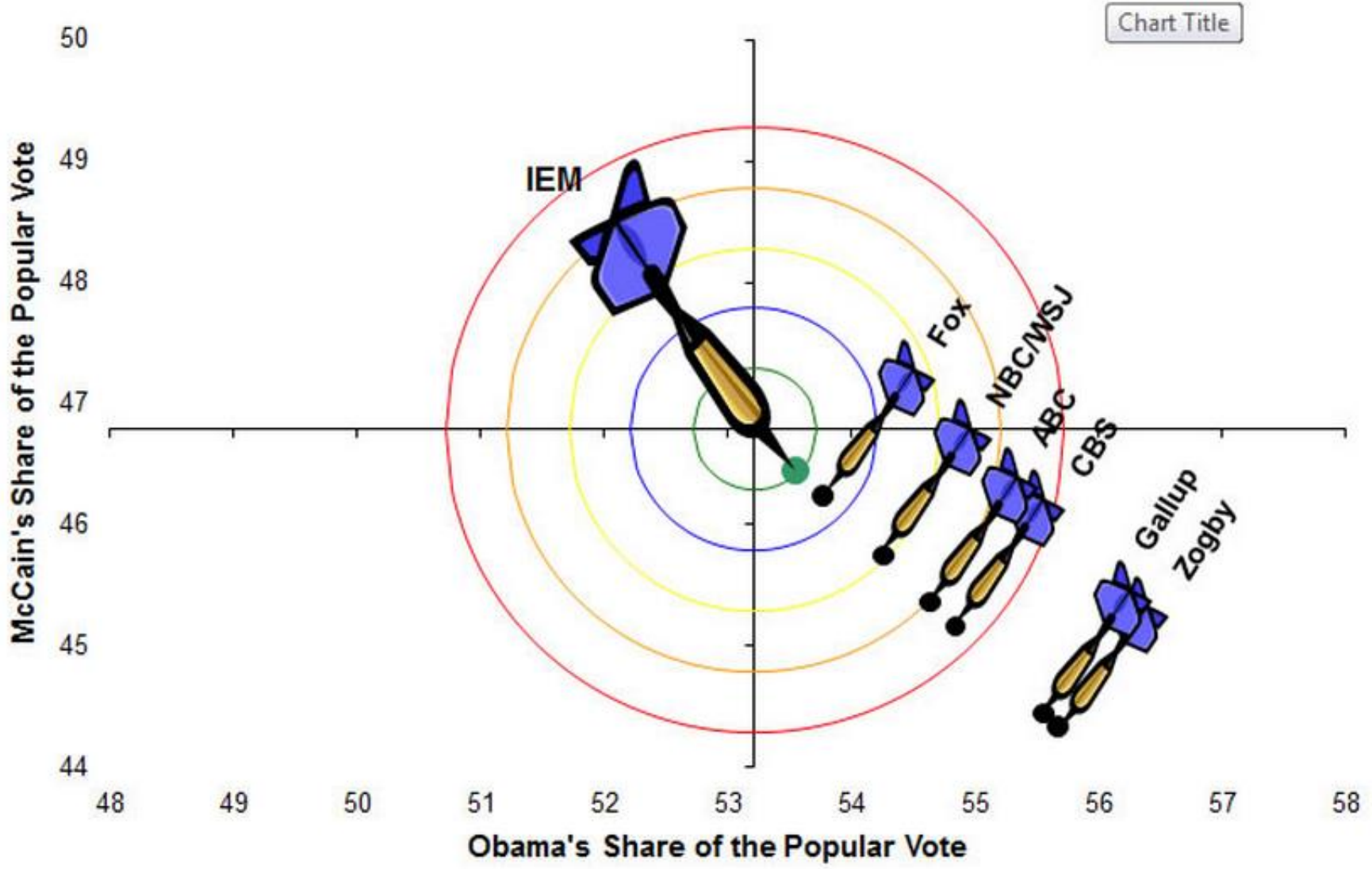
2016 US Presidential Election Vote Share Market



Iowa Electronic Markets

- Current Markets
 - 2016 U.S. Presidential Election Markets
 - 2016 U.S. Presidential Nomination Markets
 - 2016 U.S. Congressional Control Market
- Closed Markets
 - Twilight Movie Box Office Market
 - Disney Price Level Market
 - Computer Industry Returns Market
 - Mexican Peso Market
 -

IEM and Poll Accuracy, 2008 Presidential Race



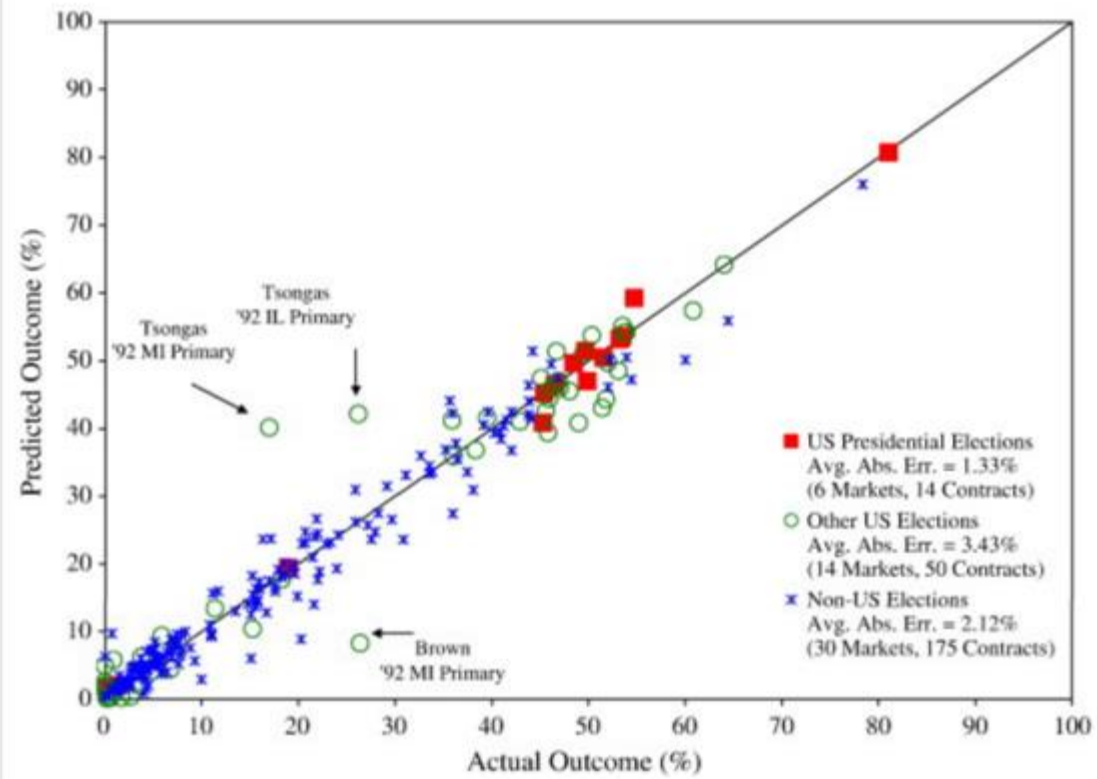


Fig. 1

Free Consultation
Get all your questions answered by the experts, plus a live demo of most relevant case studies.

Lumenogic prediction-market technology powers



COLLECTIVE INTELLIGENCE OF THE FUTURE

Solving Business Problems with Collective Intelligence

Using online prediction markets, innovation competitions and other crowdsourcing techniques, Lumenogic provides solutions that harness the collective intelligence of your employees or customers to improve:

Innovation

Harvest and prioritize more new ideas and quickly identify the winners and game changers.

Customer Insights

Build an online community of customers to tell you directly what they think and want.

Synergy Initiatives

Let your organization get creative and quickly reach consensus about how to better work together.

Forecasting

Improve accuracy by collecting and aggregating objective insights from those closest to the market.

Strategic Planning

Spontaneously engage and align stakeholders around the insights that create the best strategy.

Portfolio Management

Harness the wisdom of product teams to make more accurate and discriminating choices.

Since 2000, we have delivered results for leading companies worldwide. Lumenogic's unique combination of expertise in collective intelligence

TRUSTED BY INDUSTRY LEADERS WORLDWIDE



PredictWise

David's Updates:

David's weekly round up with just 247 days until the Election **State of Election Markets: 247 Days**

PredictWise is run wholly by **David Rothschild** who is an economist at **Microsoft Research in New York City**, but should in no way be construed as representing the views or predictions of Microsoft or any of its entities.



POLITICS

SPORTS

ENTERTAINMENT

ECONOMIC/FINANCIAL

RESULTS

BLOG

FAQ

PRESS

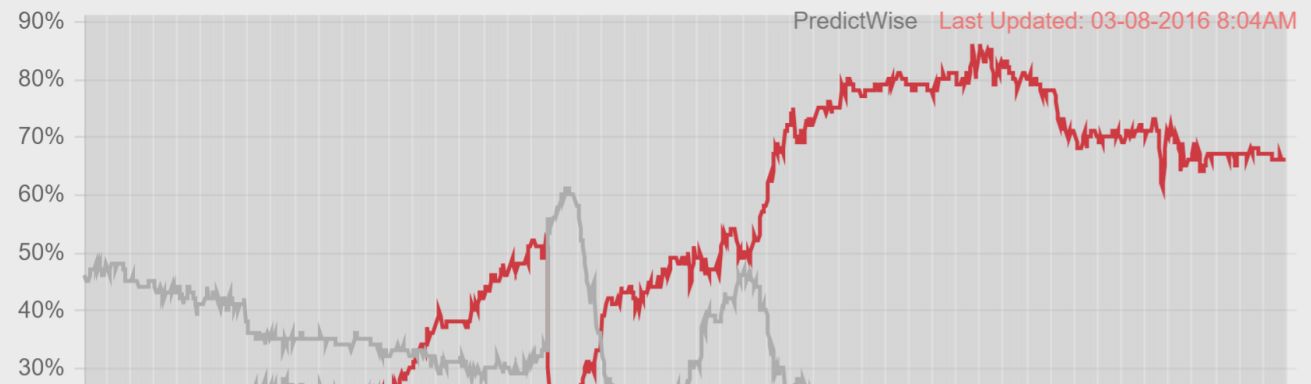
COMING SOON

RESEARCH



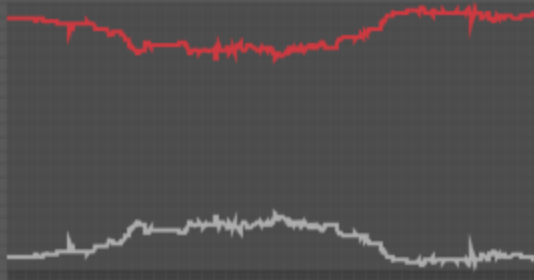
2016 PRESIDENT GOP Nomination

Donald Trump	66 %
Ted Cruz	17 %
John Kasich	9 %
Marco Rubio	7 %
Mitt Romney	1 %
Paul Ryan	1 %



2016 PRESIDENT DEM Nomination

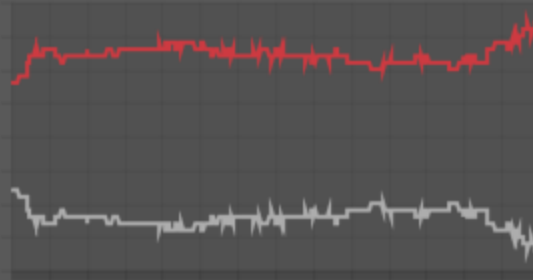
Hillary Clinton	96 %
Bernie Sanders	4 %



FULL DATA

2016 PRESIDENT Winner

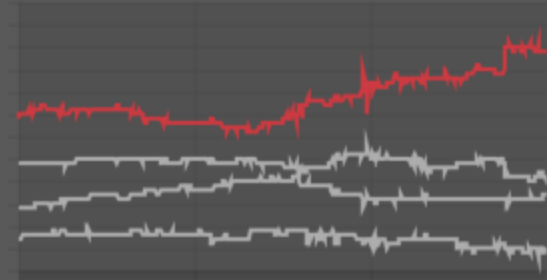
Democratic	67 %
Republican	33 %



FULL DATA

2015-16 NBA CHAMPIONSHIP Winner

Golden State Warriors	49 %
Cleveland Cavaliers	21 %
San Antonio Spurs	17 %
Oklahoma City Thunder	5 %



FULL DATA

Search Markets



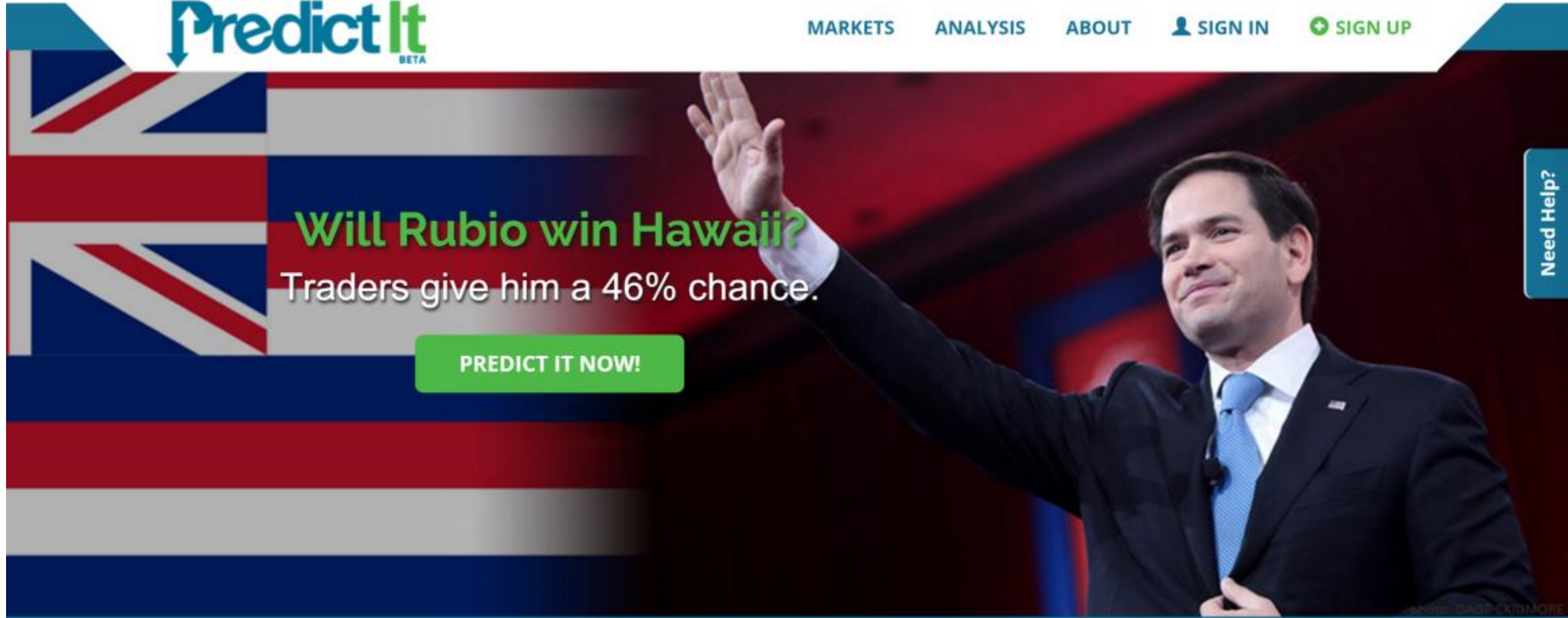
MARKETS

ANALYSIS

ABOUT

SIGN IN

SIGN UP



Will Rubio win Hawaii?

Traders give him a 46% chance.

PREDICT IT NOW!

Need Help?

THE PREDICTION MARKET FOR POLITICS



Portugal to win the Euro 2016
Will Ricardinho's magic be enough to stop Spain?
Current price per share: m฿ 7.50. Win m฿ 10.00 per share if your prediction is realized.

Predictions is the premier Bitcoin prediction market

[Sign up now](#)

All you need is a Google account.

Predict and win money

Buy shares for an event when you think it will occur. If the event is realized, you will be paid 10.00 m฿ per share.

Short selling

You can also short sell shares when you think an event will not occur. Short shares are paid 10 m฿ if the event does NOT occur.

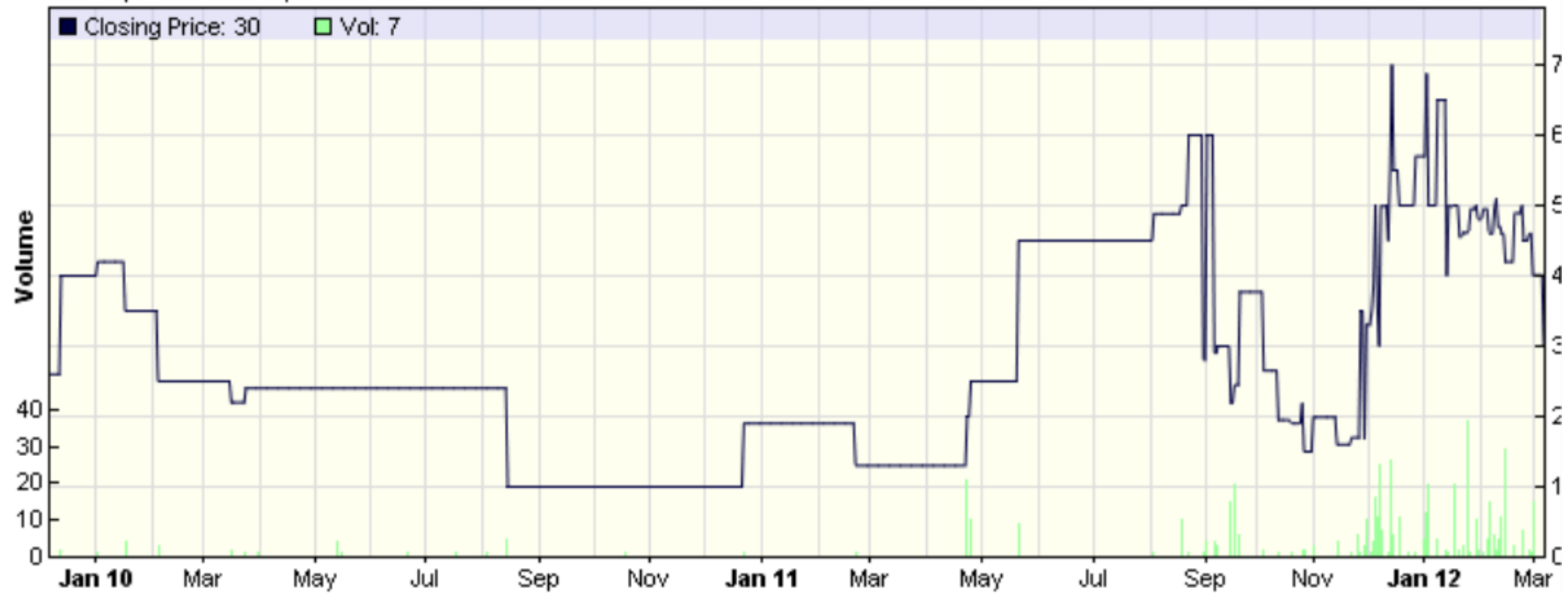
Make predictions on anything

From the presidential elections to the Oscars, to the sales of the iPad, make predictions about anything.

Closing prices chart

HIGGS.BOSON.DEC12

Dec 07, 2009 - Mar 06, 2012



Source: www.intrade.com ©

THE ARENA FOR ACCOUNTABLE PREDICTIONS

The purpose of Long Bets is to improve long-term thinking. Long Bets is a public arena for enjoyably competitive predictions, of interest to society, with philanthropic money at stake. [The Long Now Foundation](#) furnishes the continuity to see even the longest bets through to public resolution. This website provides a forum for discussion about what may be learned from the bets and their eventual outcomes. [MORE »](#)

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FEATURED BET

DURATION 10 YEARS 02008-02017

“Over a ten-year period commencing on January 1, 2008, and ending on December 31, 2017, the S&P 500 will outperform a portfolio of funds of hedge funds, when performance is measured on a basis net of fees, costs and expenses.”

PREDICTOR
Warren Buffett

CHALLENGER
Protege Partners, LLC

STAKES \$1,000,000

will go to *Girls Incorporated of Omaha* if Buffett wins,
or *Friends of Absolute Return for Kids, Inc* if Protege Partners, LLC wins.

[review and discuss this bet »](#)

[more bets »](#)

FEATURED PREDICTION

DURATION 57 YEARS 02003-02060

THE ARENA FOR ACCOUNTABLE PREDICTIONS

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On the Record: Bets

These bets are set in stone until they reach judgement. Read the arguments written in favor of each position and discuss the bets with the bettors themselves and the rest of the Long Bets community.

[HOW BETTING WORKS »](#)

NO.	PREDICTION	DURATION	STAKES	PREDICTOR	CHALLENGER
704.	During the 500 years between 02015 and 02515, the Farsight Fund will return much less than what it has historically. Past performance would suggest 3-4% real (after inflation) annual return on investment, but it will be 2% or less.	500 years 02015-02515	\$1,000 \$500	Sandra j Ewen	Sandra Ewen
601.	The original URL for this prediction (www.longbets.org/601) will no longer be available in eleven years.	11 years 02011-02022	\$1,000 \$500	Jeremy Keith	Matthew A Haughey
395.	The first true interstellar mission, targeted at the closest star to the Sun or even farther, will be launched before or on December 6, 2025 and will be widely supported by the public.	17 years 02008-02025	\$1,000 \$500	Tibor Pacher	Paul A Gilster

MY PORTFOLIO

ON THE EXCHANGE

NEWS & EVENTS

COMMUNITY

EARN HS

Search Keyword(s)

GO

VIEW PORTFOLIO

TRADE HISTORY

LIMIT ORDERS

NET WORTH HISTORY

TRADE

SYMBOL QUANTITY

MAX

Buy Sell Short Cover

limit orders / adv. trades

NEW TRAILER

What To Expect: When You're Expecting hopes to appeal to dudes.

WHAT TO EXPECT WHEN YOU'RE EXPECTING

THE BOX SCORE

Dr. Seuss' The Lorax

Weekend: \$70,217,070

Total: \$70,217,070

Trade »

Project X

Weekend: \$21,051,353

Total: \$21,051,353

Trade »

Aot of Valor

Weekend: \$13,572,570

Total: \$45,111,934

Trade »

FilmGo

Register for our FREE
Box Office Predictions Newsletter

SIGN UP TODAY!

SPIN FACTOR[®] BLOG

MORE »

- New trailer for What to Expect: When You're Expecting »
- New trailer for Ice Age: Continental Drift »
- New trailer for That's My Boy »
- New trailer for Men in Black 3 »
- Box Score: The Lorax: flushed green with box office »
- First trailer for Now Is Good »
- New trailer for ParaNorman »
- Whisper Numbers: The Lorax seeks box office »

NOW TRADING



Opening This Week

Check out the MovieStocks and Derivatives for the weekend opens in one easy location!

More »



Future Releases

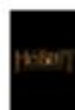
The best money-making opportunities are upcoming movies opening soon. Keep track of movie release dates here.

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In Theaters

Trade in movies still playing at a theater near



Movie Stocks

Track and invest in thousands of movies from development through production before arriving at the multiplex.

More »



StarBonds

Own a piece of your favorite star and make money when they bring in the box office.

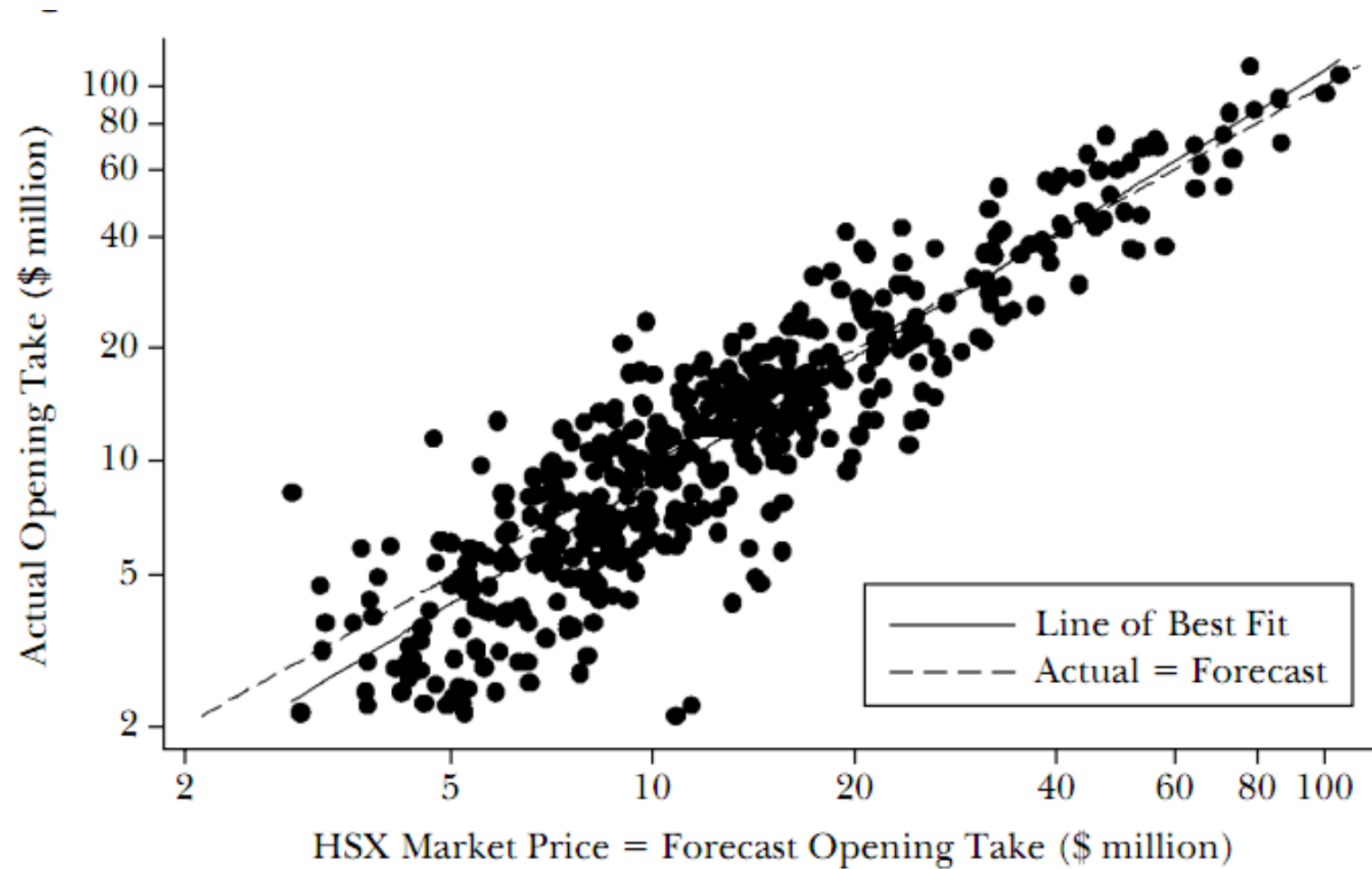
More »



Derivatives

Predict and profit from the outcome of

Hollywood Stock Exchange



Technicalities

- Person i makes a “bid order” to buy m units at price p
- Person j makes an “ask order” to sell n units at price q
- Match up trades:
 - If $p > q$ then i gets $\min(m, n)$ units from j at some cost between p and q
 - There are various approaches to deciding on which i and j and at what cost

Technicalities

- Person i makes a “bid order” to buy m units at price p
- Person j makes an “ask order” to sell n units at price q
- Match up trades:
 - If $p < q$ for all i and j , then the market has reached equilibrium – no more trades
 - $\max p$ and $\min q$ bound the value of the unknown variable

Types of Markets

- Call markets
- Continuous double-auction
- Pari-mutuel
- Bookmaker

- Market maker

What Can You Buy and Sell?

- Winner-Take-All:
 - \$1 if Cornell men's hockey beats Princeton, \$ otherwise
- Index:
 - $\$X$ if Cornell men's hockey scores a proportion X of the final score
- More generally:
 - $\$f(X)$ for random variable X
- Combine multiple markets to estimate other quantities (e.g., histograms, distributions, variance) – Spread betting
- (Real or fake money)

Why Use Prediction Markets

- Expected value of a random variable:
Integrate information about an unknown event
- Manage risk:
If event is “Snow storm in October”, can buy stocks that pay you if it happens – you make money from the event, presumably to make up for money you’d lose if such an event happens (if it doesn’t, you’ve presumably only spent a little money)

What Can Prediction Markets Compute?

- Numerical quantities:
 - Probabilities
 - Means
 - Medians
 - Distributions
 - Histograms
 - Standard deviations
- Contingent outcomes
- “Meta” questions:
 - If the market “New Hires in Q305” is run, will it attract interest?”

Using Prediction Markets to Track Information Flows: Evidence from Google¹

Bo Cowgill
Google

Justin Wolfers
Wharton, U. Penn
NBER, CEPR, IZA

Eric Zitzewitz
Dartmouth College

January 2009

Abstract

In the last three years, Google has conducted the largest corporate experiment with prediction markets we are aware of. In this paper, we illustrate how markets can be used to study how an organization processes information. We document a number of biases in Google's markets, most notably an optimistic bias. Newly hired employees are on the optimistic side of these markets, and optimistic biases are significantly more pronounced on days when Google stock is appreciating. We find correlated trading among employees who sit within a few feet of one another and employees with social or work relationships. The results are interesting in light of recent research on the role of optimism in entrepreneurial firms, as well as recent work on the importance of geographic and social proximity in explaining information flows in firms and markets.





Home

Concept
Overview

The Organizations
behind PAM

Becoming a
PAM Trader

A Market in the Future of the Middle East

The Policy Analysis Market will provide insight into the interactions among Middle Eastern and U.S. interests and policy decisions.

Trading begins October 1, trader registration begins August 1.

Focus on a Security of Interest					
Security Structure	Name	Current Price	Recent Price	Trading Volume	Your Holding
Base	IQcd403<65	0.624	0.602	1,800	100
Cond.	TYum303100-120		0.635		
Sort Market Transactions	Display in Portfolio	Transfer to Watch List	Transfer to Trading		

Market Information / Trades & Watch / Portfolio Views

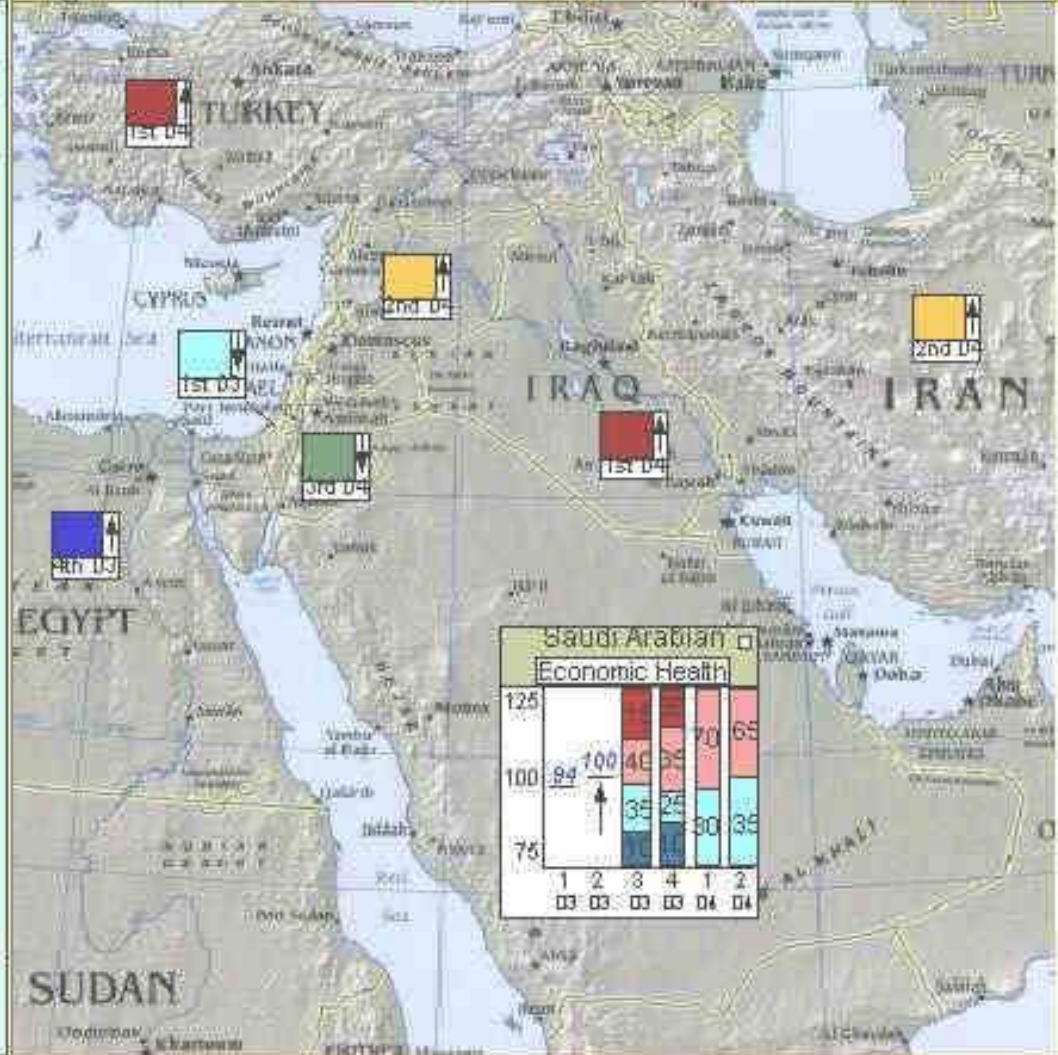
Market Transactions					
Security	Current Price	Recent Price	Trading Price Range	Volume	Transfer To Focus
JNec40365-105	0.26	0.22	0.33	2,150	<input type="checkbox"/>
IQcd403<65	0.17	0.15	0.29	1,800	<input type="checkbox"/>
TYum303100-120					
SAmp403>110	0.35	0.32	0.40	1,050	<input type="checkbox"/>
ILu\$104>100	0.55	0.52	0.61	850	<input type="checkbox"/>
ETu\$104<110	0.40	0.35	0.40	700	<input type="checkbox"/>
INec303105-115	0.45	0.45	0.52	650	<input type="checkbox"/>
JNec40365-105	0.26	0.22	0.33	2,150	<input type="checkbox"/>
IQcd403<65	0.17	0.15	0.29	1,800	<input type="checkbox"/>
TYum303100-120					
SAmp403>110	0.35	0.32	0.40	1,050	<input type="checkbox"/>
ILu\$104>100	0.55	0.52	0.61	850	<input type="checkbox"/>
ETu\$104<110	0.40	0.35	0.40	700	<input type="checkbox"/>
INec303105-115	0.45	0.45	0.52	650	<input type="checkbox"/>
JNec40365-105	0.26	0.22	0.33	2,150	<input type="checkbox"/>
IQcd403<65	0.17	0.15	0.29	1,800	<input type="checkbox"/>
TYum303100-120					
SAmp403>110	0.35	0.32	0.40	1,050	<input type="checkbox"/>
ILu\$104>100	0.55	0.52	0.61	850	<input type="checkbox"/>
ETu\$104<110	0.40	0.35	0.40	700	<input type="checkbox"/>
INec303105-115	0.45	0.45	0.52	650	<input type="checkbox"/>

of Registered Traders = Total Funds Deposited =
 # of Recent Traders = Value of Recent Trades =

Special Event Securities			
#	Brief (click for Detail)	Price	B or C
1.4.3	Jordan King Overthrown 4th 03	0.24	<input type="checkbox"/> <input type="checkbox"/>
2.4.3	N. Korea Missile Attack 4th 03	0.15	<input type="checkbox"/> <input type="checkbox"/>
1.1.4	U.S. Recog. Palestine 1st 04	0.32	<input type="checkbox"/> <input type="checkbox"/>
2.1.4	Arafat Assassinated 1st 04	0.17	<input type="checkbox"/> <input type="checkbox"/>

Global Securities						
	1 03	2 03	3 03	4 03	1 04	2 04
U.S. Equities	7.5	7.2	7.1	7.5	7.9	8.0
U.S. GDP	6.23	6.32	6.38	6.36	6.33	6.41
Global Trade	7.5	7.2	7.1	7.5	7.9	8.0
Terror	113	455	589	2143	654	334
Deaths						
U.S. Mil. Deaths	45	1274	1743	500	230	436

Regional Securities: Military Economy Civility U.S. Econ U.S. Mil



July 28, 2003

- Senator Ron Wyden (D): "The idea of a federal betting parlor on atrocities and terrorism is ridiculous and it's grotesque"
- Senator Byron Dorgan (D): "useless, offensive and unbelievably stupid"

July 29, 2003

- Program canceled
- John Poindexter (R) resigns

Problems for Prediction Markets

- Information cascades
- Matters with hidden information
- Manipulation?
- Low numbers
- Legal barriers
- Moral qualms

Problems for Prediction Markets

- Cognitive barriers
 - Favorite-longshot bias – low probability events
 - In-group bias
 - Optimism bias
 - Confirmation bias
 - Risk-seeking
 - Speculative bubbles

Comparison to Voting

- Those without information will not participate
- You ask subjects about their prediction of the outcome, not their vote (as is done with polling)
- You can “change” your vote over time
- Can have most people who are random, as long as a minority have the information to set the right price