

“Early in life I had noticed that no event is
ever correctly reported in a newspaper...”
— George Orwell

Bitcoin Prediction Markets

Getting Politicians to work harder, by getting
voters to act lazier.

Chicago, IL

Paul Sztorc
truthcoin.info

Version 2.1
7 Sept 2019

About Me

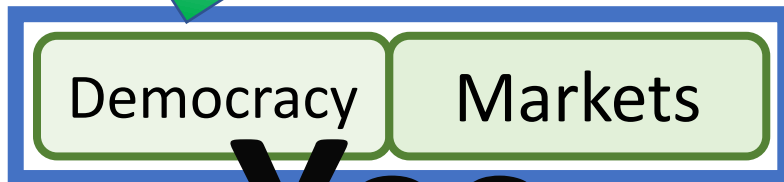
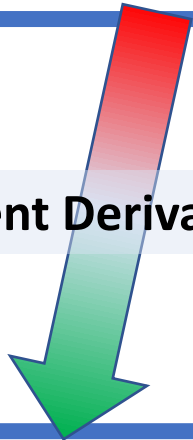
- Southern CT
- Case Western: BA Economics, MS Applied Math, MBA
- Consulting
- Yale Econ Department, Statistician, pre-PhD
- Bitcoin
 - Truthcoin.info blog,
 - Scaling Bitcoin I, II, III and IV; TABconf, BoB, Bitcoin2019.

Improvement; NOT Replacement

Improvement



Event Derivatives



Yes

Replacement



No

Talk, in One Slide

- **Problem:** Politicians are installing bad policies into society, and getting away with it.
 - **Solution:** Make it easy to: detect imperfect politicians, and fire them asap.
-
- **Specifically:** Create blockchain assets whose ultimate valuation reflects politician's competence. Citizens glance at spot prices, just before voting.

For Example, Voter might see:

Average, over years 2020-2024...	Incumbent Party	Rival Party
Total Government Spending (\$/person)	\$12,568	\$10,407 <div>better</div>
Total Money Earned by all Citizens (\$ billions)	\$16,427	\$17,009 <div>Slightly better</div>
Total Deaths, all causes (thousands of people)	2,917	2,901 <div>basically the same</div>

Agenda

1. Background
2. Electoral Feedback
3. Event Derivatives
4. Synthesis
5. Getting Everyone to Trade and to Care

Background Knowledge

1. Idea has intellectual history.
2. (At least) one decent project exists.
3. No ICO, No Utility Token

Name-Dropping: Finney, Merkle

Intrade's Conditional Prediction Markets

By [Hal Finney](#) · July 29, 2008 7:14 pm · [Comments \(24\)](#) · [« Prev](#) · [Next »](#)

We have often discussed the possible benefits of prediction markets for reducing bias. One key element that could be particularly useful is a conditional prediction market, where betting claims are based on outcomes conditional on some factor we want to evaluate. Robin recently mentioned the possible benefit from [market claims on longevity or health conditional on various interventions](#).

Unfortunately, there are few prediction markets in the world, and fewer conditional ones, so it is hard to know how practical this institution may become. Thanks to an initiative by OB contributor [Peter McCluskey](#), Intrade – the large, real-money prediction market – has added conditional claims

“There are only a few people alive today worth listening to. Robin Hanson is one of them.”

– Ralph Merkle, co-inventor of asymmetric (public/private) key cryptography, inventor of cryptographic hashing, and of the Merkle tree.

More Supporters

ECONOMICS

The Promise of Prediction Markets

**Kenneth J. Arrow,¹ Robert Forsythe,² Michael Gorham,³ Robert Hahn,^{4*} Robin Hanson,⁵
John O. Ledyard,⁶ Saul Levmore,⁷ Robert Litan,⁸ Paul Milgrom,¹ Forrest D. Nelson,⁹
George R. Neumann,⁹ Marco Ottaviani,¹⁰ Thomas C. Schelling,¹¹ Robert J. Shiller,¹²
Vernon L. Smith,¹³ Erik Snowberg,¹⁴ Cass R. Sunstein,⁷ Paul C. Tetlock,¹⁵ Philip E. Tetlock,¹⁶
Hal R. Varian,¹⁷ Justin Wolfers,¹⁸ Eric Zitzewitz¹⁹**

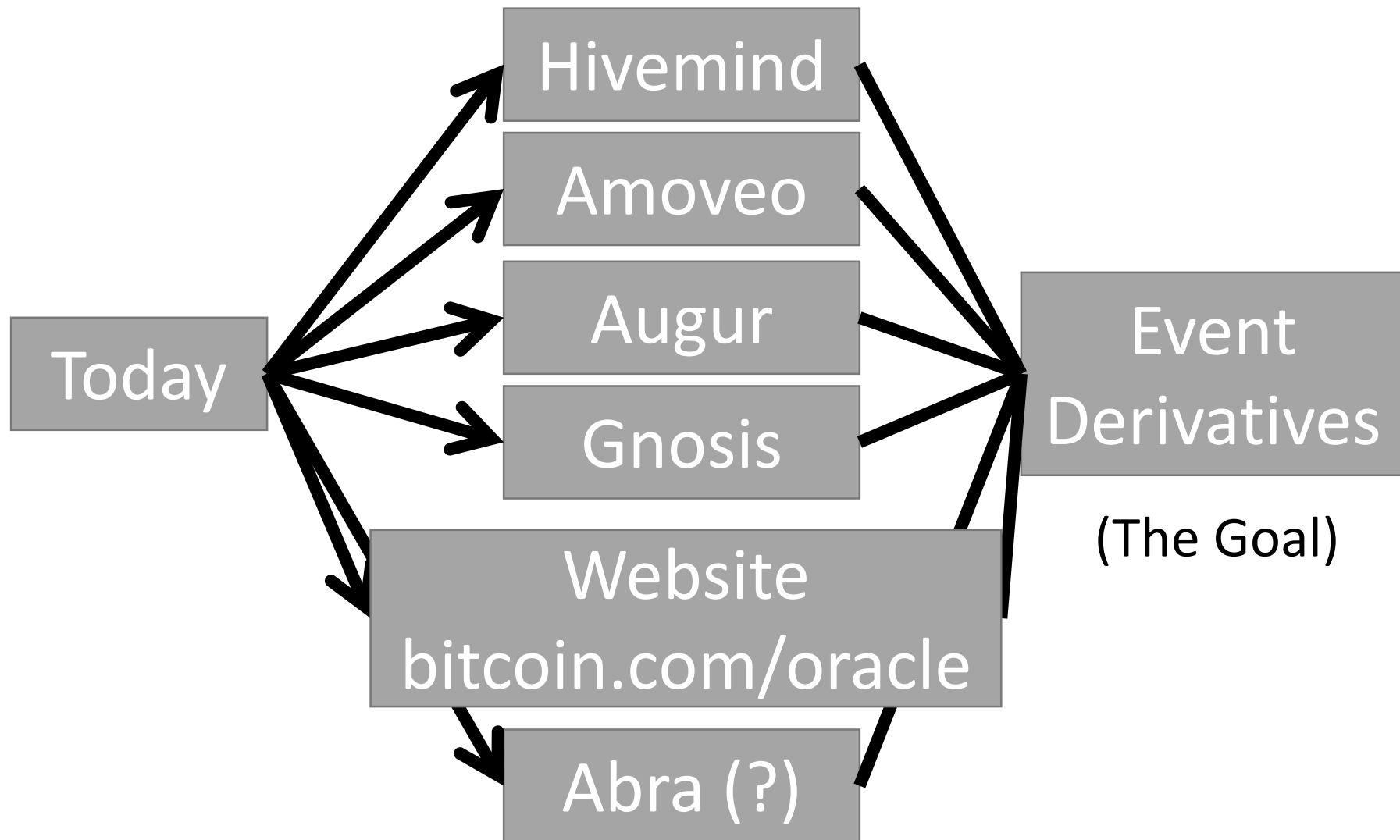
The ability of groups of people to make predictions is a potent research tool that should be freed of unnecessary government restrictions.

Prediction markets are forums for trading contracts that yield payments based on the outcome of uncertain events.

6-

Information Revelation Through Time

We Need at Least One Solution, to the Blockchain Oracle Problem



Truthcoin

Peer-to-Peer Oracle System and Prediction Marketplace

Paul Sztorc¹

truthcoin@gmail.com

<https://github.com/psztorc/Truthcoin>

1M5tVTtynuqiS7Goq8hbh5UBcxLaa5XQb8

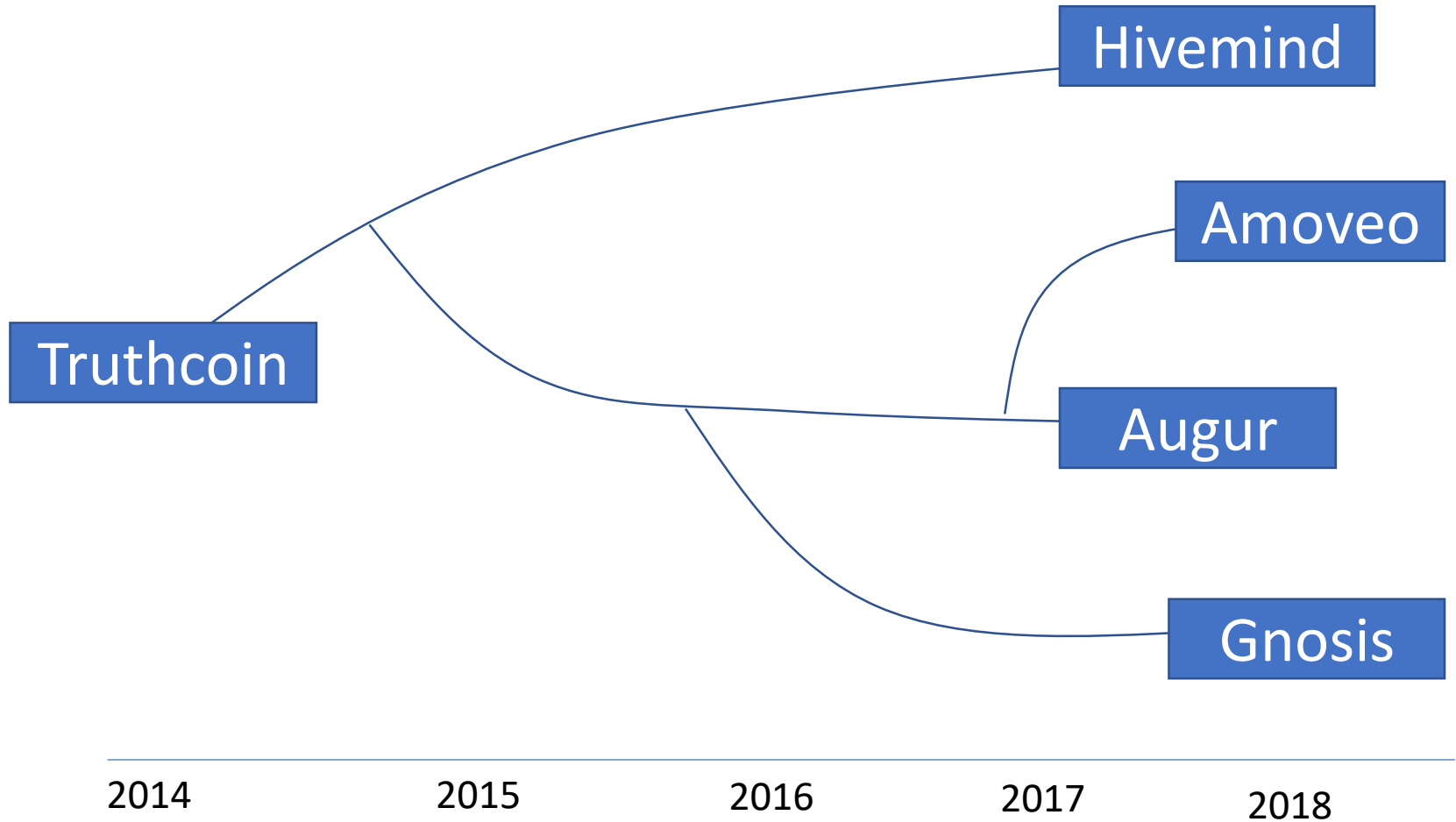
Version 1.5 – 12/14/2015

Abstract. Bitcoin can support financial derivatives and smart contracts, but the main benefits are lost if a trusted third party is required to inform these contracts. Instead, I propose a proof-of-work sidechain which collects information on the creation and state of Prediction Markets (PMs).

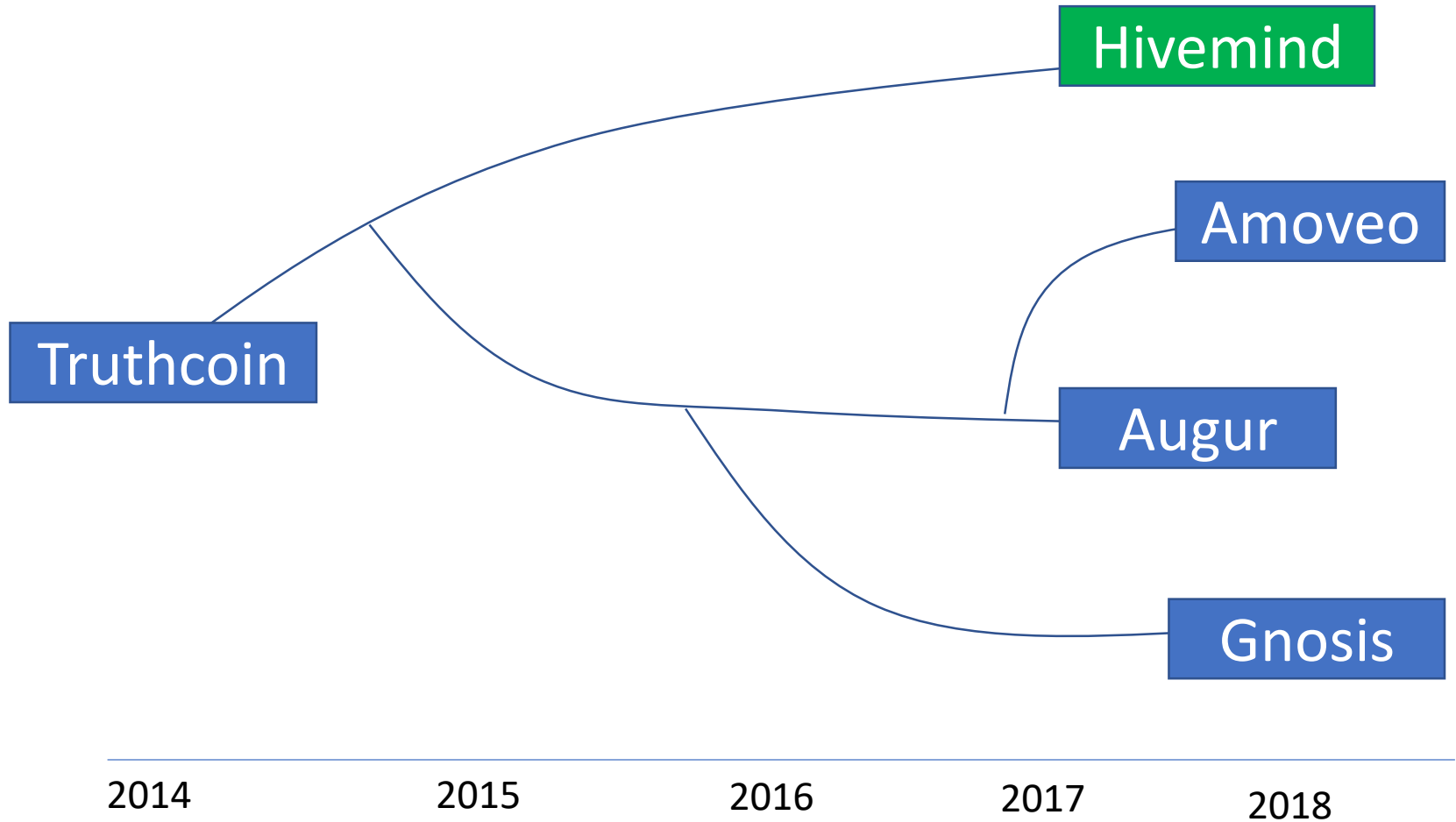
Paper Reviews (~2015)

- “...may be the most important invention since Bitcoin itself.”
- **Roger Ver**
- “I’m very optimistic about the feasibility of this project.”
- **Andrew Poelstra**
- “...a real project with interesting use cases.”
- **Dr. Adam Back**
- “...at least it’s clever crazy rather than stupid crazy. :)”
- **Peter Todd**

Multiple Implementations










Multiple Implementations



This is a pre-release test build - use at your own risk - do not use for mining or merchant applications

Recent Hivemind Objects:

Type/Icon	
	Bitcoin exchange rate as reported by CoinD
	Will Jeff Immelt have been replaced, as CEO
	Global surface temperature anomaly, cumul
	Will Barack Obama win US President in 201
	Unemployment drivers
	Fire Immelt?
	Unemployment drivers

Balances

Available:	400.00000000 BTC
Pending:	0.00000000 BTC
Immature:	50.00000000 BTC
Total:	450.00000000 BTC

Recent transactions

-  5/17/16 11:41 [+50.00000000 BTC]
(19y1RCwANn71vEZkxMrDoAjXuCzERyJE8A)
-  5/17/16 11:41 +50.00000000 BTC
(14u1sX6BTJnnTAL2dPDgm7WKKubofpwuEy)
-  5/17/16 11:41 +50.00000000 BTC
(1D6kbEHq7BXpjsVbuxLivt4CV4fv8poCk7)
-  5/17/16 11:41 +50.00000000 BTC
(1AAdn8e5v7QM155C6Cc6Z8u82SZWDLH6cd)
-  5/17/16 11:41 +50.00000000 BTC
(16bFT93g3QY53xsEkK6UwnKYaa7FDBxsoc)
-  5/17/16 11:40 +50.00000000 BTC
(1NwRMJnpetsFHVCpzjeYo1s89StTi4HHDa)

Hivemind Core - Wallet [testnet]

File Settings Help

Overview Send Receive Transactions Markets Decisions Author Vote

Branch: Main

Search:

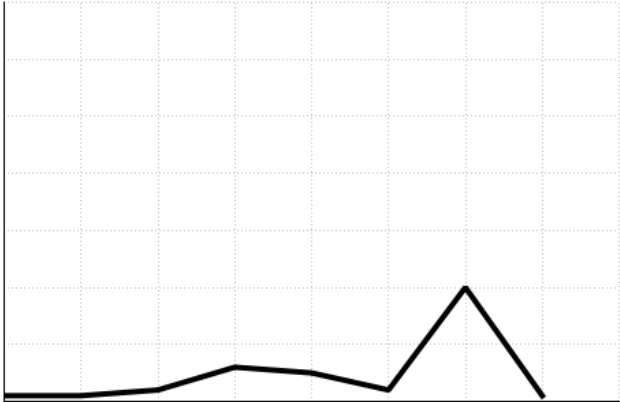
Tags:

Scale: 1d 3d 1wk 3wk 1m 3m 1yr

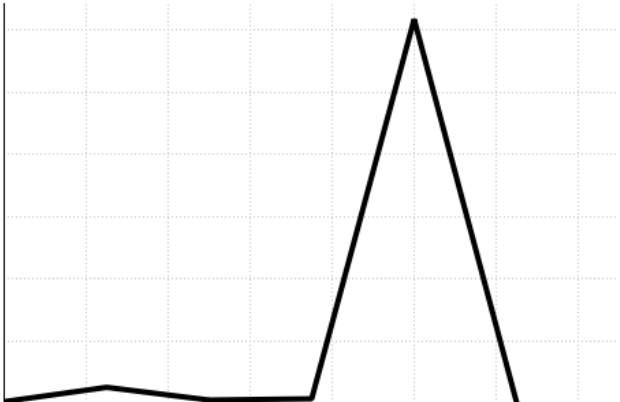
Graph

Market Info

Unemployment drivers



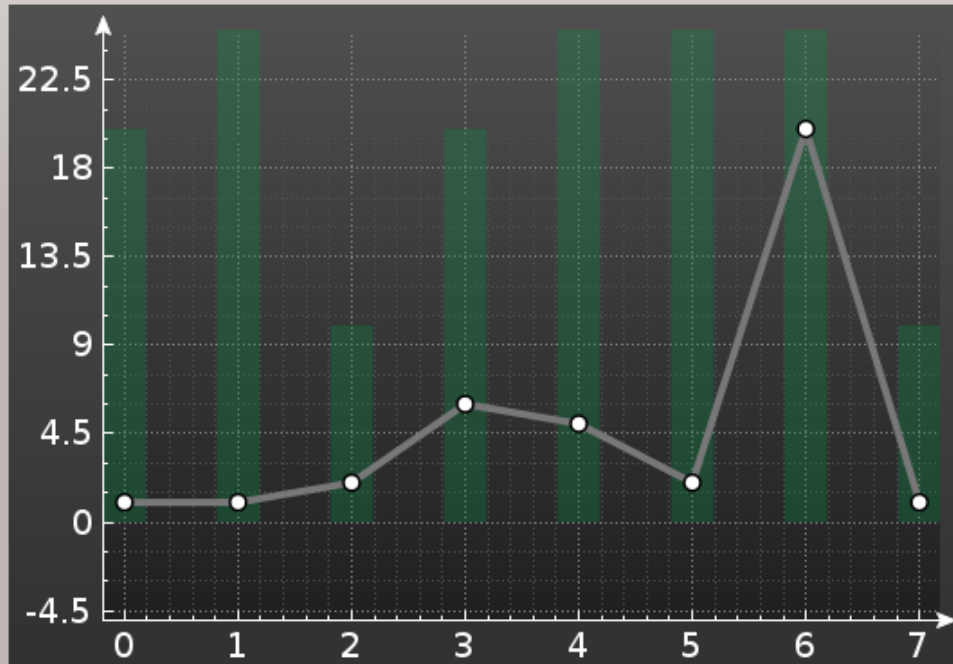
Fire Immelt?



Unemployment drivers

Title: Unemployment drivers
Description: Market on unemployment
Tags: tags
Market ID: 40e701a38cfc16df5502070ff05ff274682a84e6413d0174282ff...

Title: Fire Immelt?
Description: Market on the employment of GE CEO Immelt
Tags: tags
Market ID: 23f3591495cf5158b35c0e1945fade02aa6021350fbea957a768...

Market ID: 40e701a38cfc16df5502070ff05ff274682a84e6413d0174282ff54d45d0576c [Copy](#)☒ Standard ☐ Two Dimensional ☐ High DimensionalMarket Graph: ☒ 1 Month ☐ 1 Day ☐ 5 Minutes

Current Price: 0.00

Shares Owned: 0

Your trades:

☒ Long (Buy) ☐ Short (Sell)[Make Order](#) [? Help](#)

Shares:

-10

+10

Price:

Decision State:

Payout Address:

Shares to buy: 0

Trade Cost: 0

Balance: 0

Finalize

Background Knowledge

1. Idea has intellectual history.
2. (At least) one decent project exists.
3. No ICO, No Utility Token

Agenda

1. Background

2. Electoral Feedback

3. Event Derivatives

4. Synthesis

5. Getting Everyone to Trade and to Care

Why does the Public Sector Disappoint?



Mayor Quimby

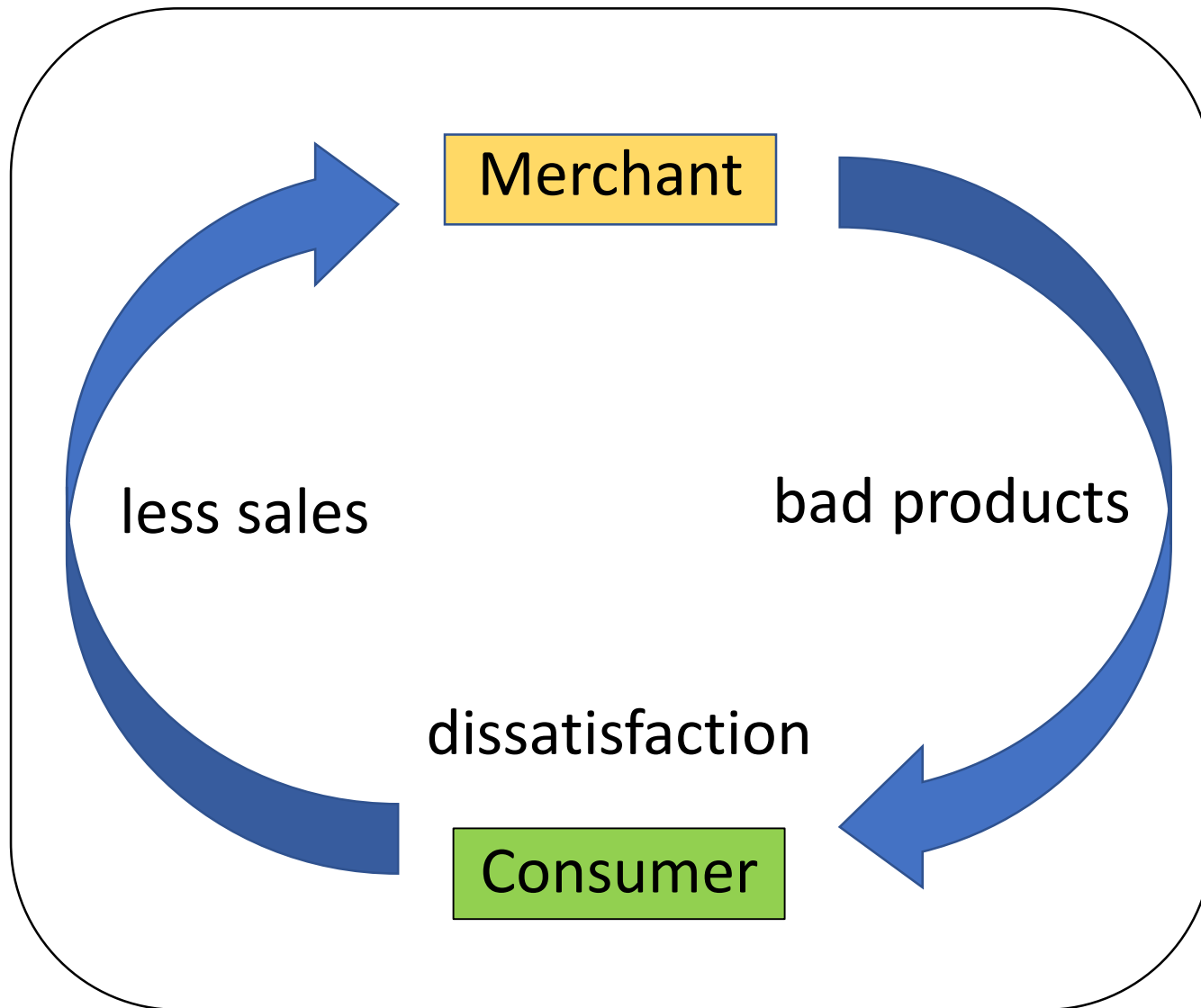


Chief Wiggum

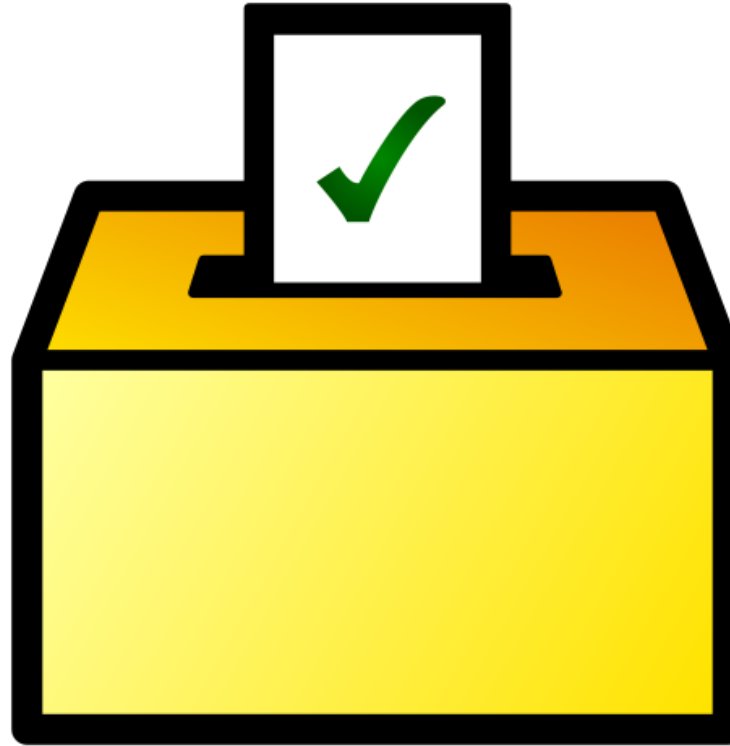


Giant D**h vs.
T**d Sandwich**

Feedback (Free Market)

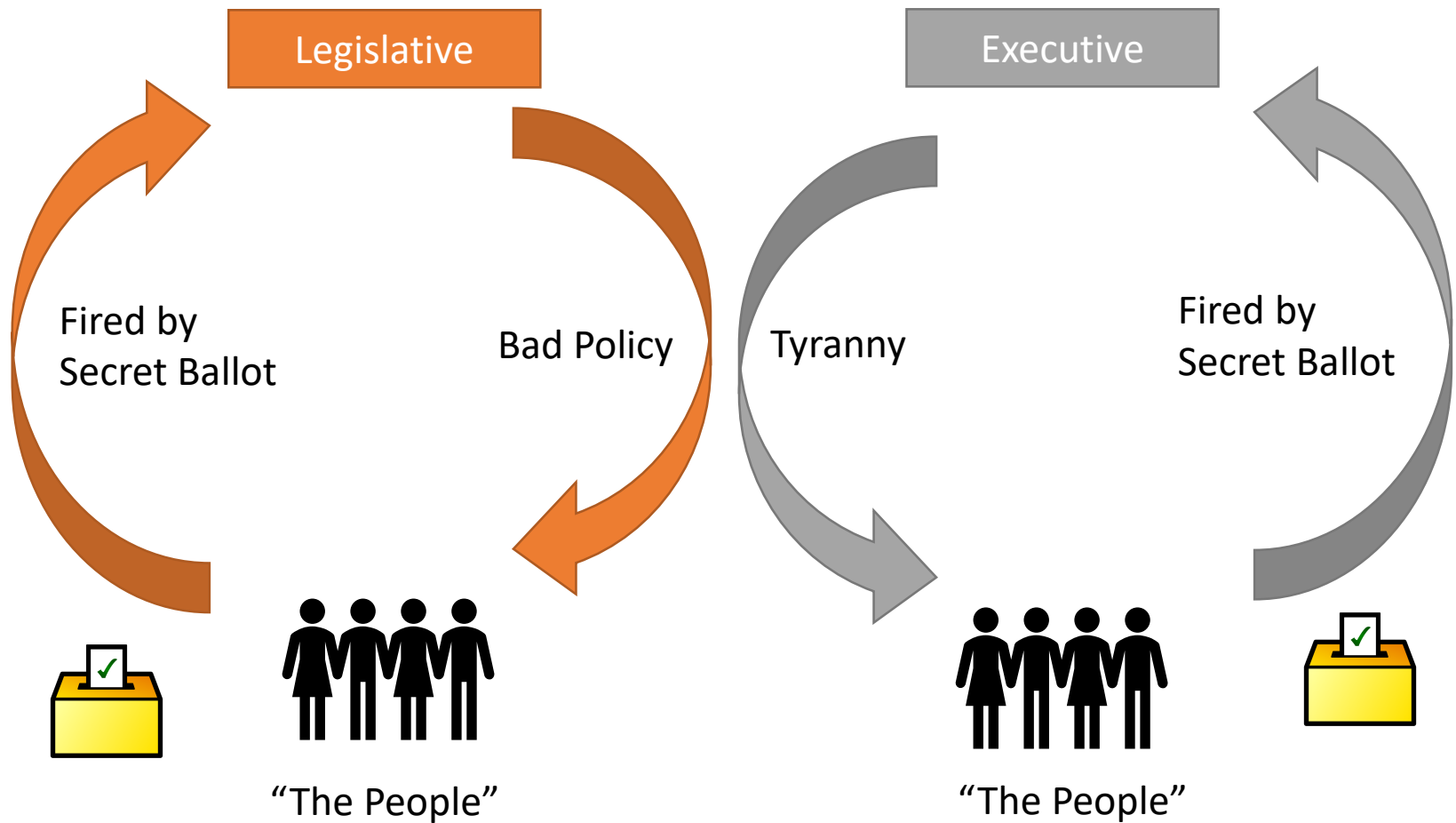


Feedback (Democracy)

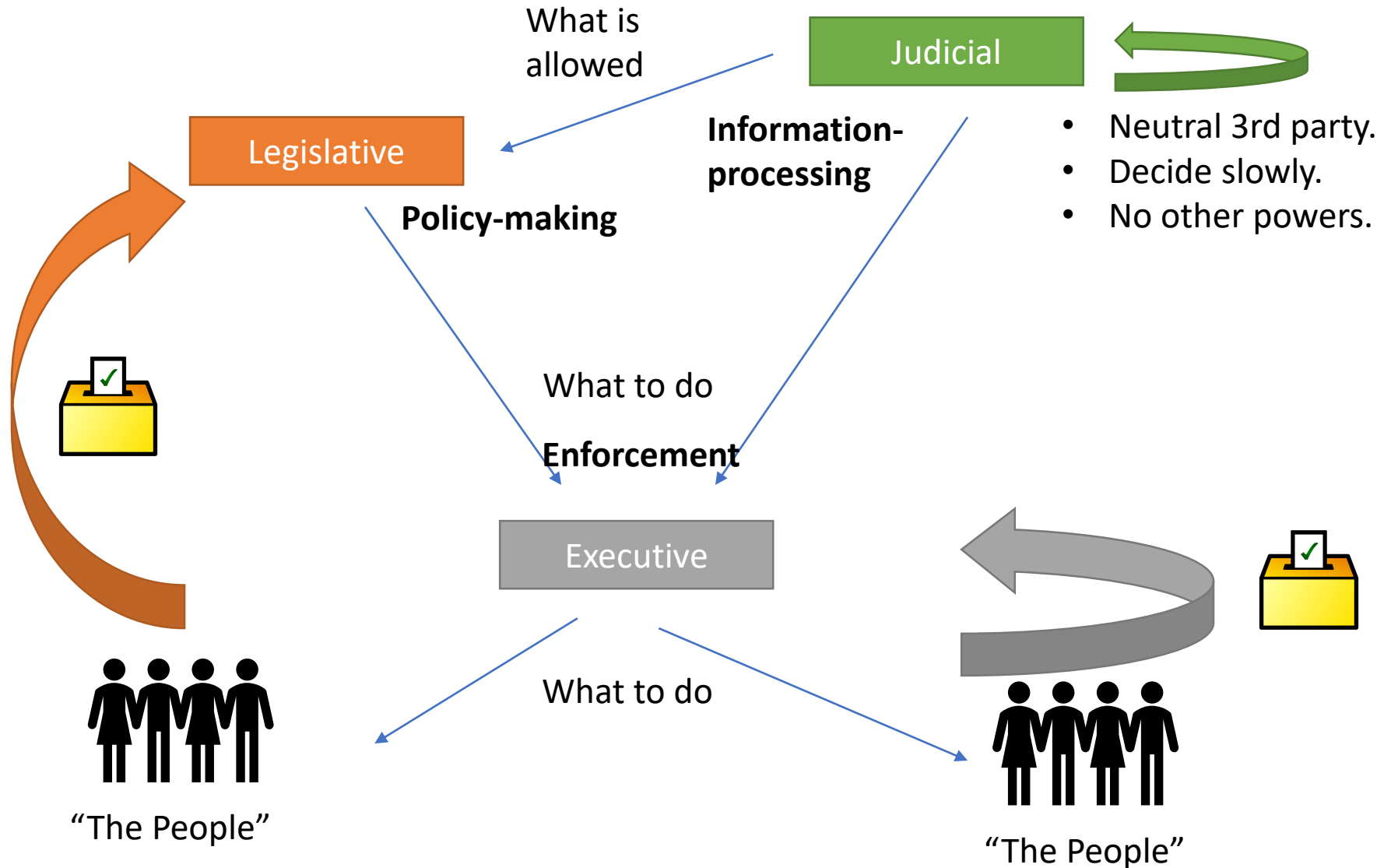


Ballot Box

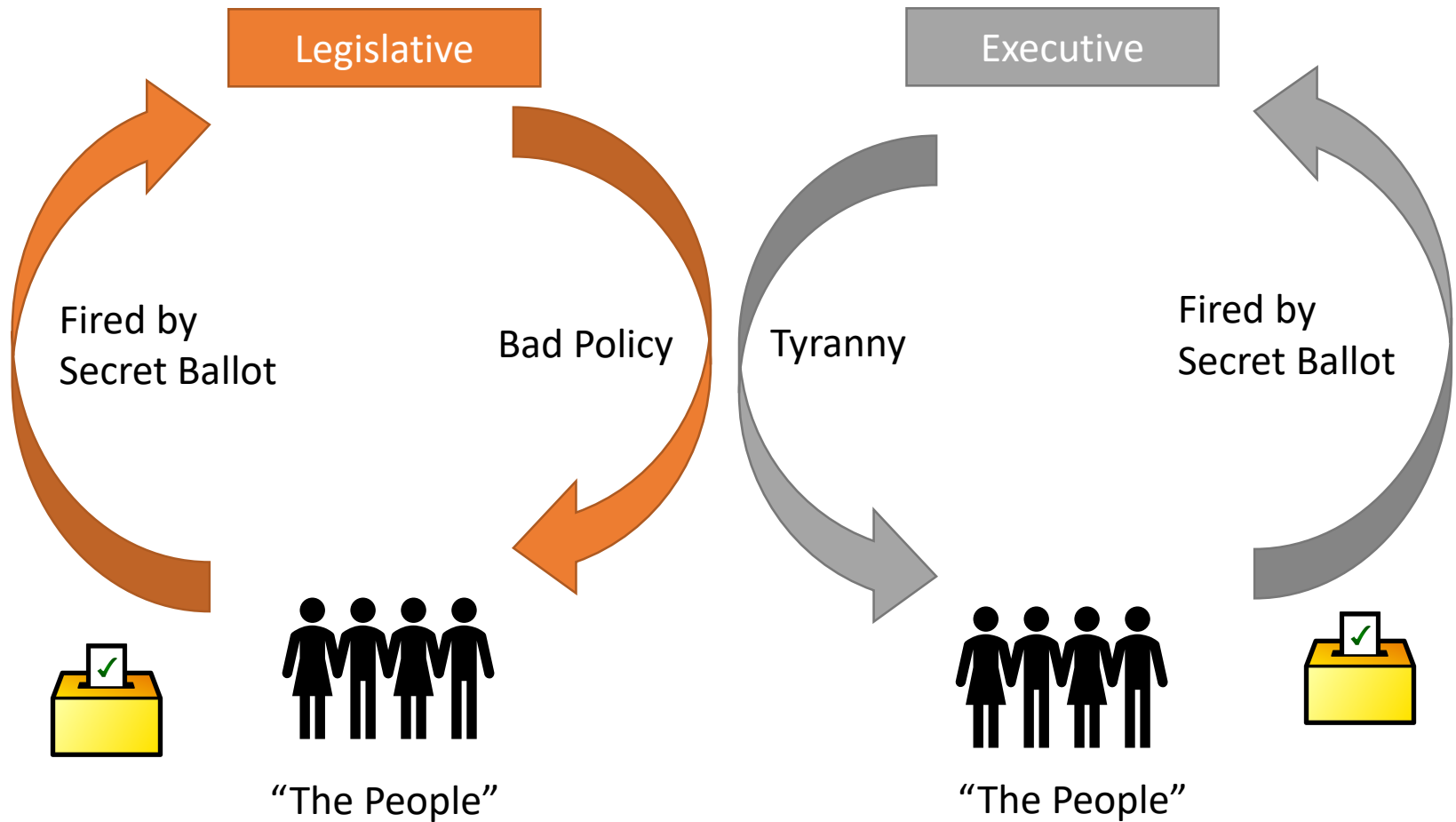
Feedback to Remove Errors



Post-Enlightenment Political Technology



Feedback to Remove Errors



Feedback: Market vs Electoral



1. Frequency
- 2.

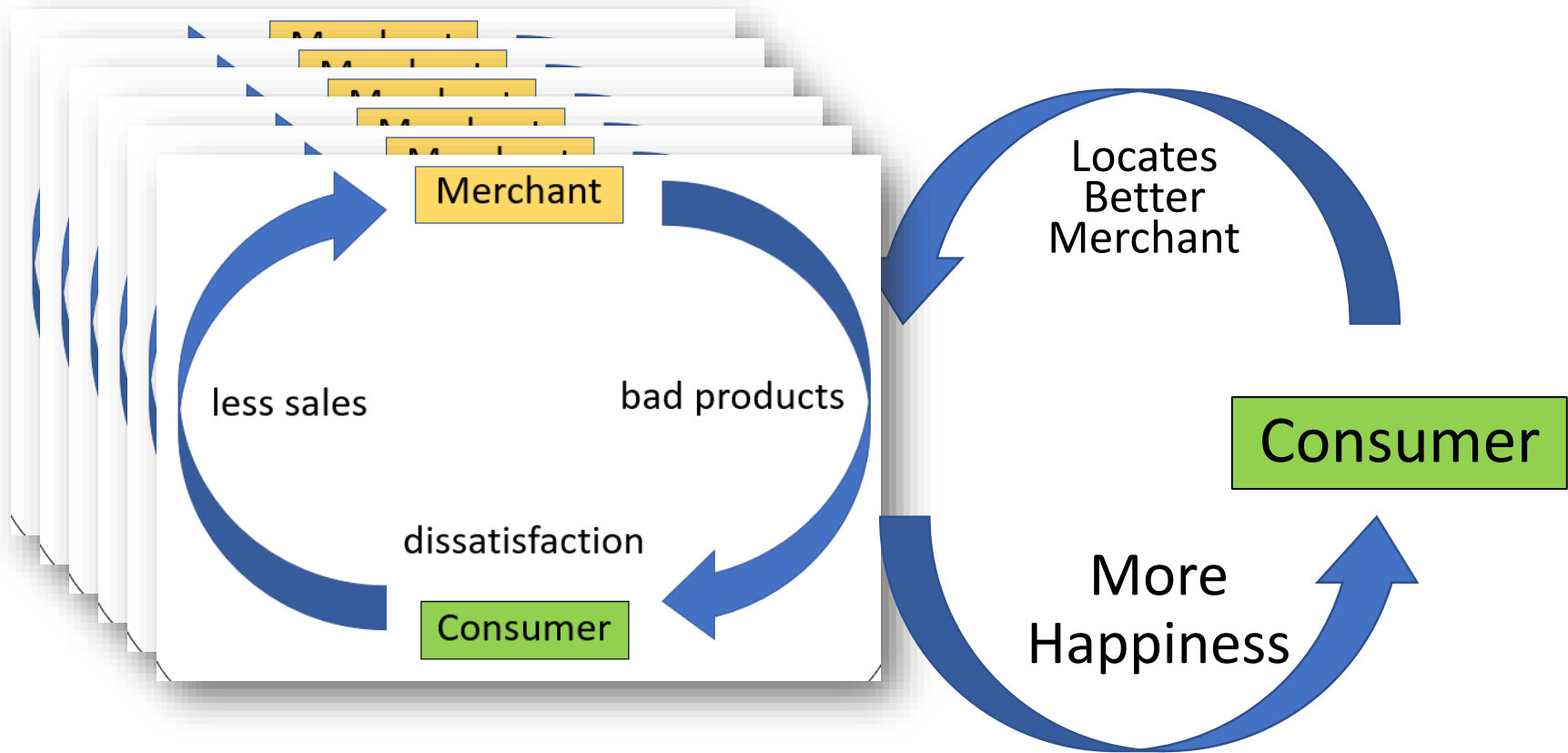
Feedback: Market vs Electoral



1. Frequency
2. Research

Research = Search for Alternatives

- Disappointing sale → search for alternatives.



Costs/Benefits of Research

	Cost	Benefit	Quantity
Private Sector (Non-interactive)	100%	100%	Efficient
Public Sector (Interactive)	100%	~ 0 %	Shortage

71% of Americans can't even **name** their Congressional Representative (Delli-Carpini and Keeter (1997))

Let alone: rival candidates, or policies or their effects.

continental breakfast



*Curated especially for
HHonors Diamond & Gold Members.
Please enjoy up to 3 choices
plus any beverage listed.*

YOGURT
WITH GRANOLA

**STEEL CUT
IRISH OATS**
CINNAMON APPLE

**HOMEMADE
WAFFLE**

PASTRIES

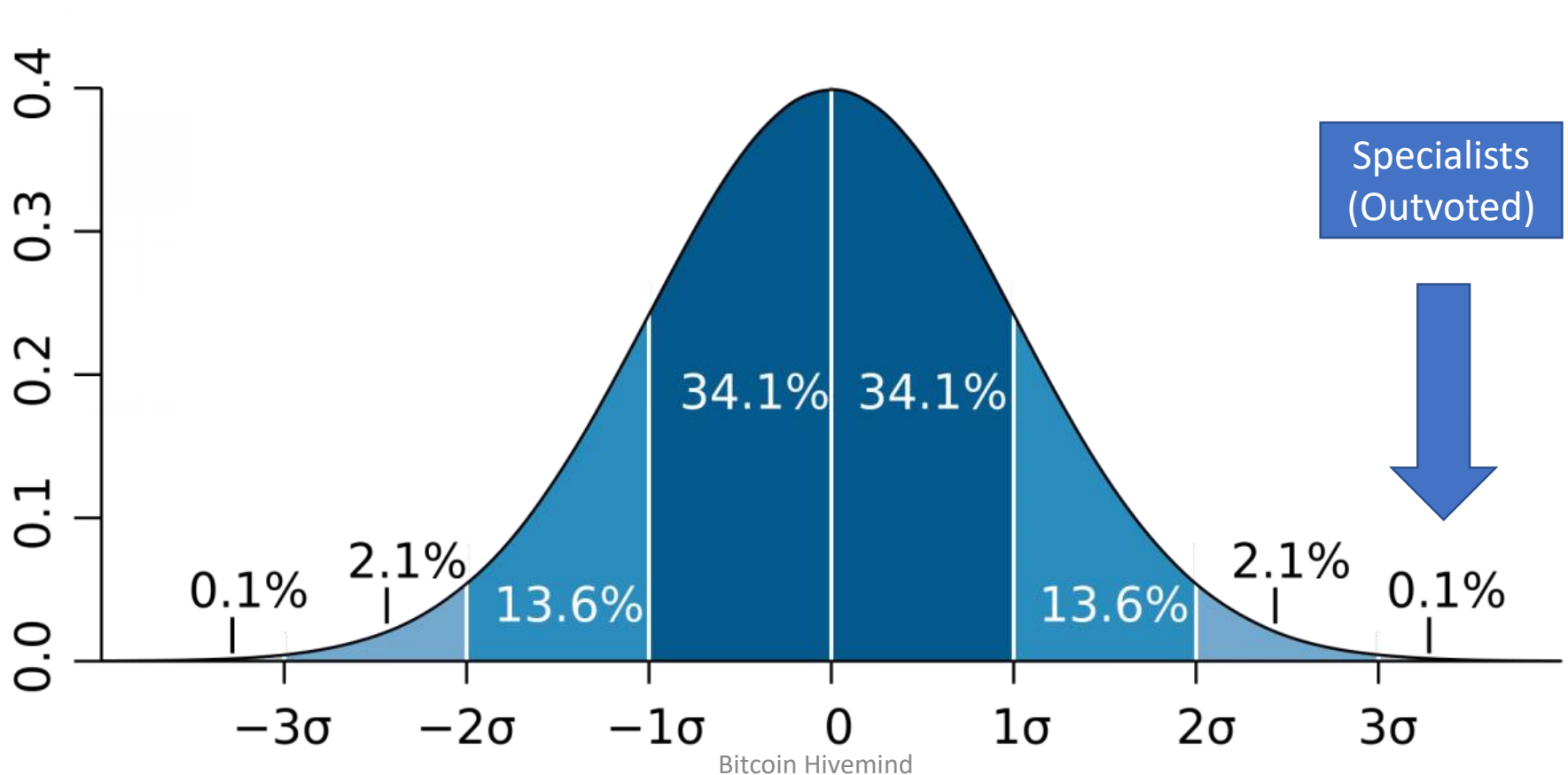
CROISSANT
PAIN AU CHOCOLATE
BLUEBERRY MUFFINS

illy Coffee • Orange Juice • Grapefruit Juice

*Complimentary when presenting valid
Hilton discount card issued at check-in.*

Educating People = Won't Solve Problem

- Worth Doing? Yes.
- But: Layperson = NOT an expert specialist, by definition.



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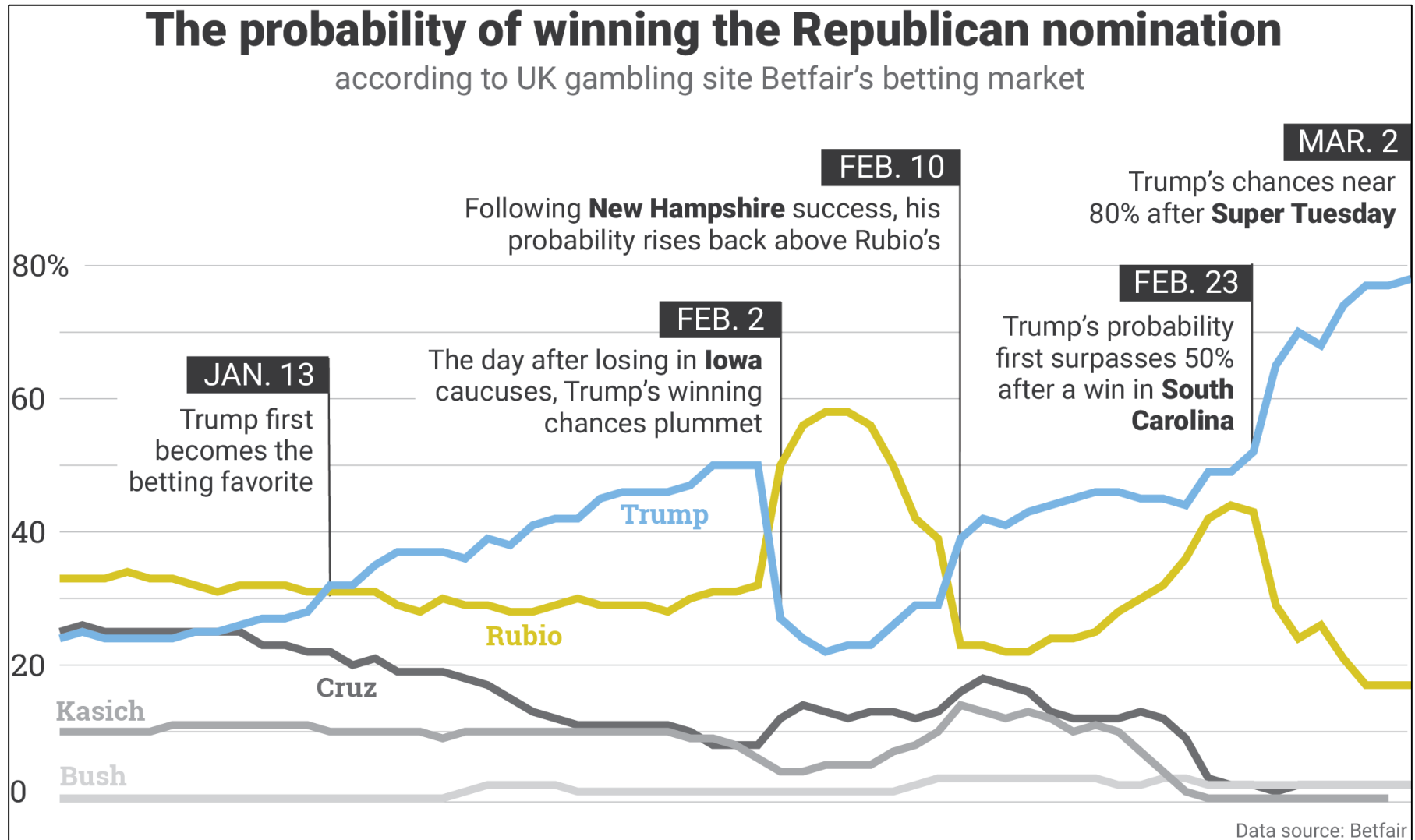
Event Derivative (InTrade.com) - 2012 global warming

(also called a “prediction market”)



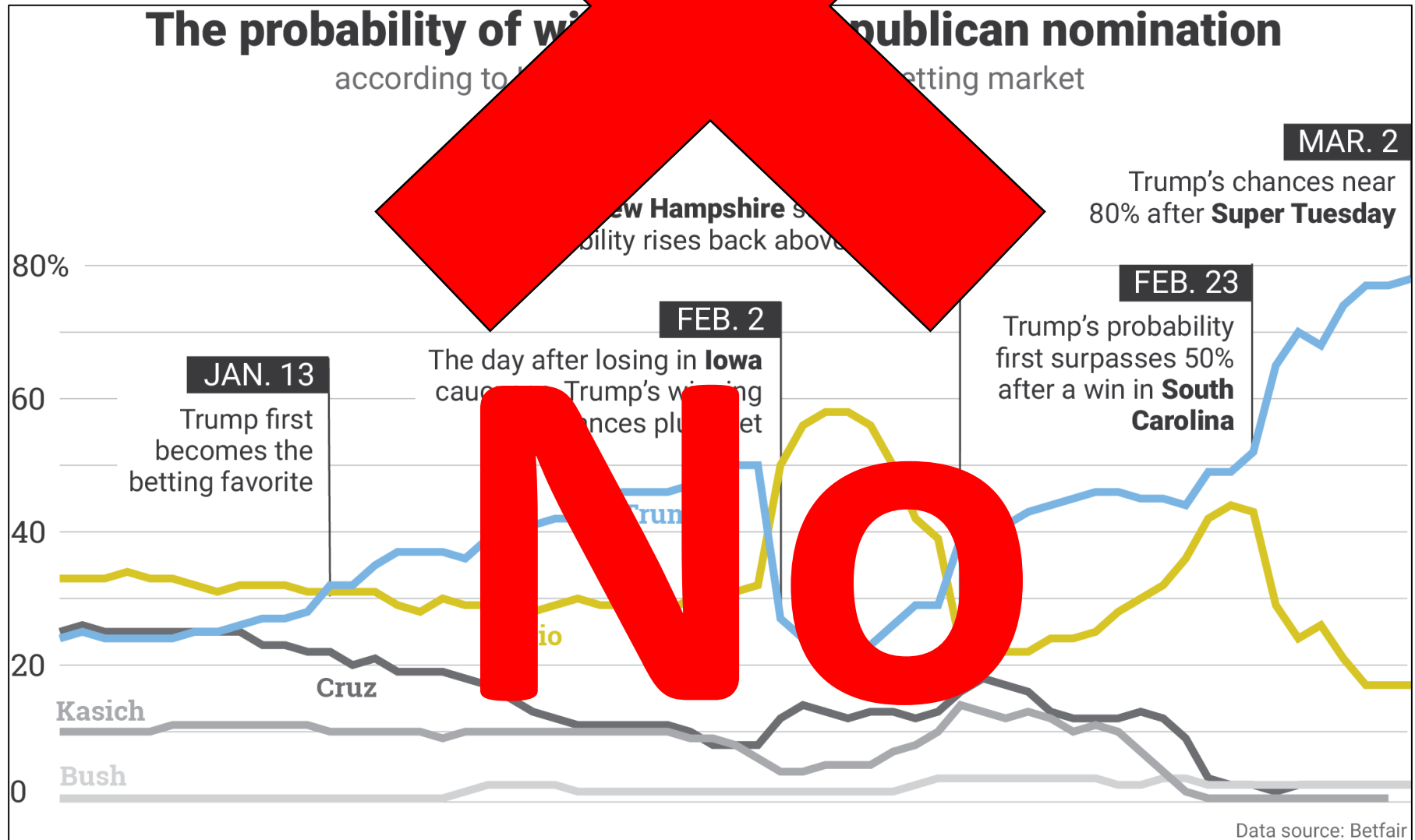
Ran from Jan 2011 to End of 2012

Betting on who will win



Graphic from NationalJournal.com

Betting on w



Graphic from NationalJournal.com

Nine Slides on Multivariate Betting

(1/9) Probability -- Review

282	Heads
283	Heads
284	Heads
285	Tails
286	Heads
287	Heads
288	Heads
289	Tails
290	Heads
291	Heads
292	Tails
293	Tails
294	Tails
295	Tails
296	Heads
297	Heads
298	Tails
299	Tails
300	Heads
301	Tails
302	Tails

Coin Flip #303

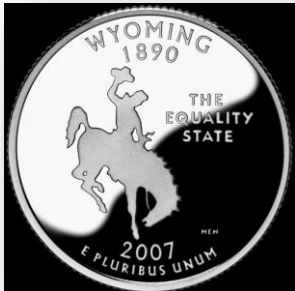
H	.50
T	.50

Some future event (coin flip).

Heads has 50% likelihood.
Tails has 50% likelihood.

1.00

Total probabilities
add up to 100%.



(2/9) Probability -- Review

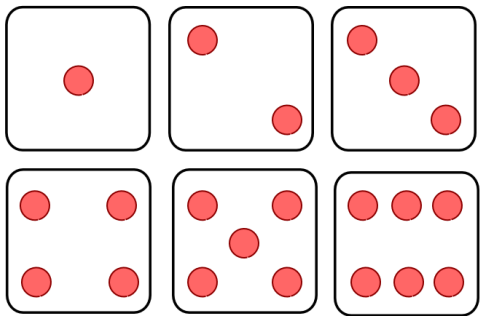
Some future event (dice roll).

Dice Roll #1190

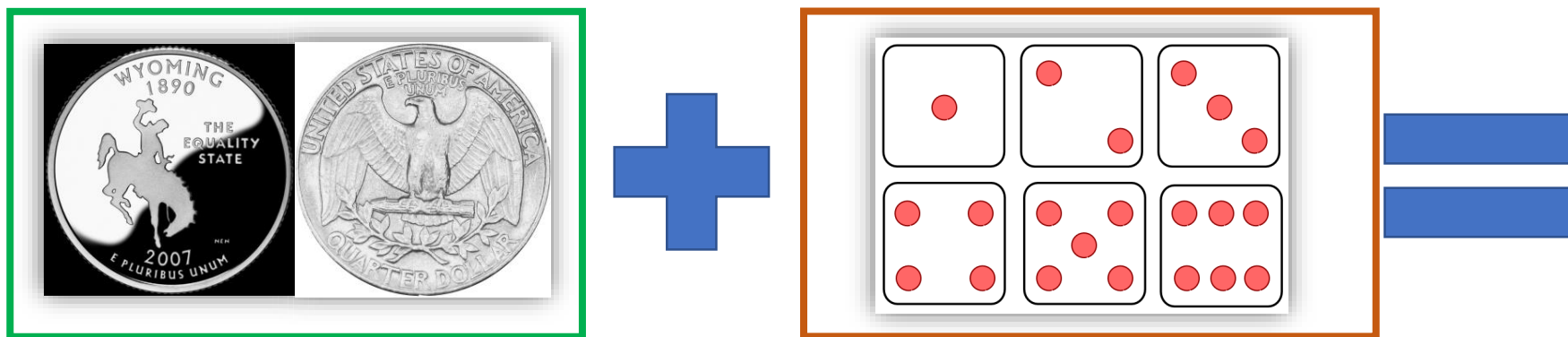
(1)	$1/6$
(2)	$1/6$
(3)	$1/6$
(4)	$1/6$
(5)	$1/6$
(6)	$1/6$

Each outcome has one-sixth likelihood.

1.00



(3/9) – Two Random Events, Taken Together



Dice Roll #1190

Coin
Flip
#303

	(1)	(2)	(3)	(4)	(5)	(6)
H	1/12	1/12	1/12	1/12	1/12	1/12
T	1/12	1/12	1/12	1/12	1/12	1/12

"margin"

.50

.50

1/6

1/6

1/6

1/6

1/6

1/6

1.00

"margin"

Rolling a two AND
flipping a tails.

Rolling a two.

Flipping a tails.

(4/9) -- Conditional Probability Taught Quickly

282	Heads
283	Heads
284	Heads
285	Tails
286	Heads
287	Heads
288	Heads
289	Tails
290	Heads
291	Heads
292	Tails
293	Tails
294	Tails
295	Tails
296	Heads
297	Heads
298	Tails
299	Tails
300	Heads
301	Tails
302	Tails
303	Tails
304	Tails

		Coin Flip #304	
		H	T
Coin Flip #305	H	.25	.25
	T	.25	.25
		Coin Flip #304	
		H	T
Coin Flip #304	H	?	?
	T	?	?

Two coins.

The same event
(#304 x #304)
(not realistic)!

1	2	3	4	5	6
?	?	?	?	?	?
?	?	?	?	?	?
?	?	?	?	?	?
?	?	?	?	?	?
?	?	?	?	?	?
?	?	?	?	?	?
?	?	?	?	?	?
?	?	?	?	?	?

The same dice.

(5/9) -- Conditional Probability Taught Quickly

282	Heads
283	Heads
284	Heads
285	Tails
286	Heads
287	Heads
288	Heads
289	Tails
290	Heads
291	Heads
292	Tails
293	Tails
294	Tails
295	Tails
296	Heads
297	Heads
298	Tails
299	Tails
300	Heads
301	Tails
302	Tails
303	Tails
304	Tails

Coin Flip #304		
	H	T
Coin Flip #305	H	.25 .25
	T	.25 .25
Coin Flip #304		
	H	T
Coin Flip #304	H	.50 0
	T	0 .50

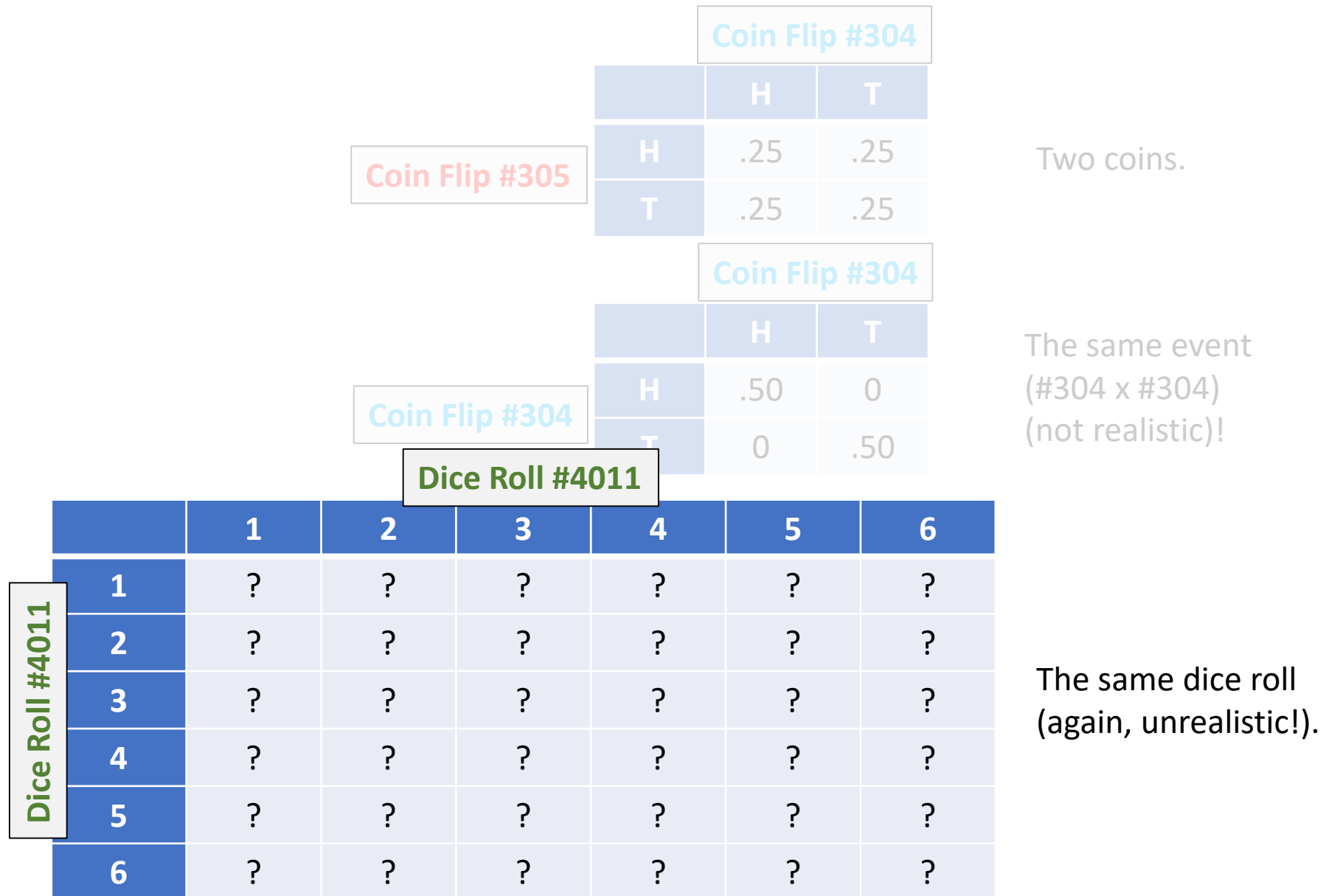
Two coins.

The same event
(#304 x #304)
(not realistic)!

1	2	3	4	5	6
?	?	?	?	?	?
?	?	?	?	?	?
?	?	?	?	?	?
?	?	?	?	?	?
?	?	?	?	?	?
?	?	?	?	?	?
?	?	?	?	?	?
?	?	?	?	?	?

The same dice.

(6/8) -- Conditional Probability Taught Quickly



(7/9) -- Conditional Probability Taught Quickly

		Coin Flip #304	
		H	T
Coin Flip #305	H	.25	.25
	T	.25	.25

Two coins.

		Coin Flip #304	
		H	T
Coin Flip #304	H	.50	0
	T	0	.50

The same event
(#304 x #304)
(not realistic)!

Dice Roll #4011

Dice Roll #4011		1	2	3	4	5	6
	1	(1/6)	0	0	0	0	0
	2	0	(1/6)	0	0	0	0
	3	0	0	(1/6)	0	0	0
	4	0	0	0	(1/6)	0	0
	5	0	0	0	0	(1/6)	0
	6	0	0	0	0	0	(1/6)

The same dice roll
(again, unrealistic!).

(8/9) “Clumping” = Related

Coin Flip #304		
	H	T
H	.50	0
T	0	.50

Will Candidate X be Elected?

Will American Voters
Earn Higher Incomes?

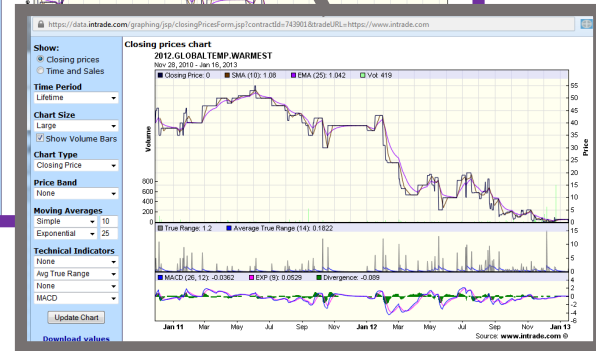
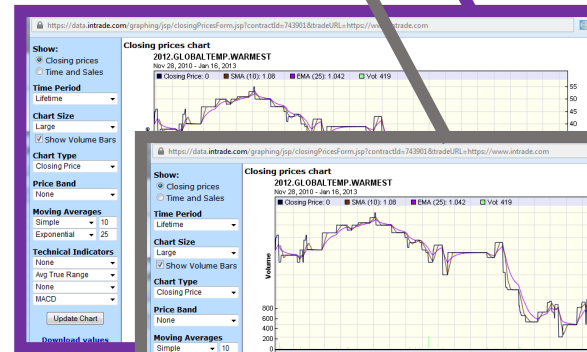
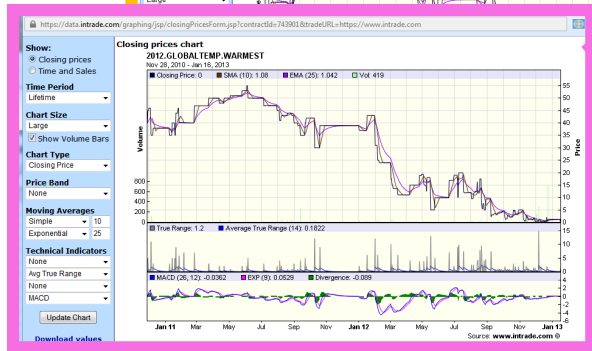
	Yes	No
Yes	.50	0
No	0	.50

(9/9) Synthesis – Just Four Different Event-Derivative Markets

Will Candidate X be Elected?

**Will American Voters
Earn Higher Incomes?**

	Yes	No
Yes	.50	0
No	0	.50



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5. Forcing Everyone to Trade and To Care

Basic Arithmetic

		“Good Economy” in 2021 (<5% Unemployment)?			“Good Economy” (Conditional Likelihood)
		No	Yes		
Nov 2020 Election Winner	Someone Else	0.0005	0.0005	0.001	50%
	Democrat	.42	.19	.61	31%
	Republican	.23	.15	.38	39%
	Elon Musk	.00	.009	.009	100%
		.6505	.3495		

Voter Sees on Election Morning (For Example):

Average, over years 2020-2024...	Incumbent Party	Rival Party
Total Government Spending (\$/person)	\$12,568	\$10,407 better
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The plan will collapse if...

- ...no one cares enough to...
 - ...trade in these markets, or “No Trade”
 - ...look at them on election day. “No Attention”

4. SYNTHESIS

5. Forcing Everyone to Trade and To Care

Problem 1: No Trade

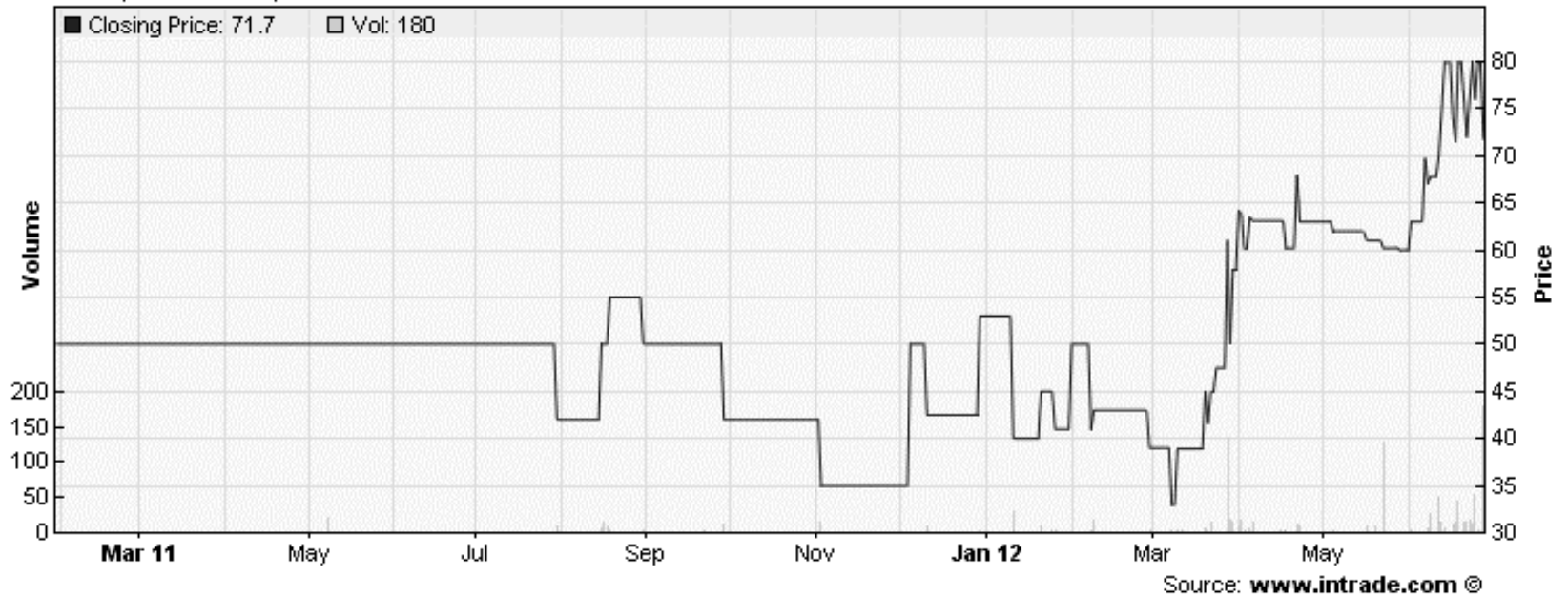


“No Trade”

How do we get knowledgeable people to trade in these markets?

HEALTHCARE.UNCONST.DEC13

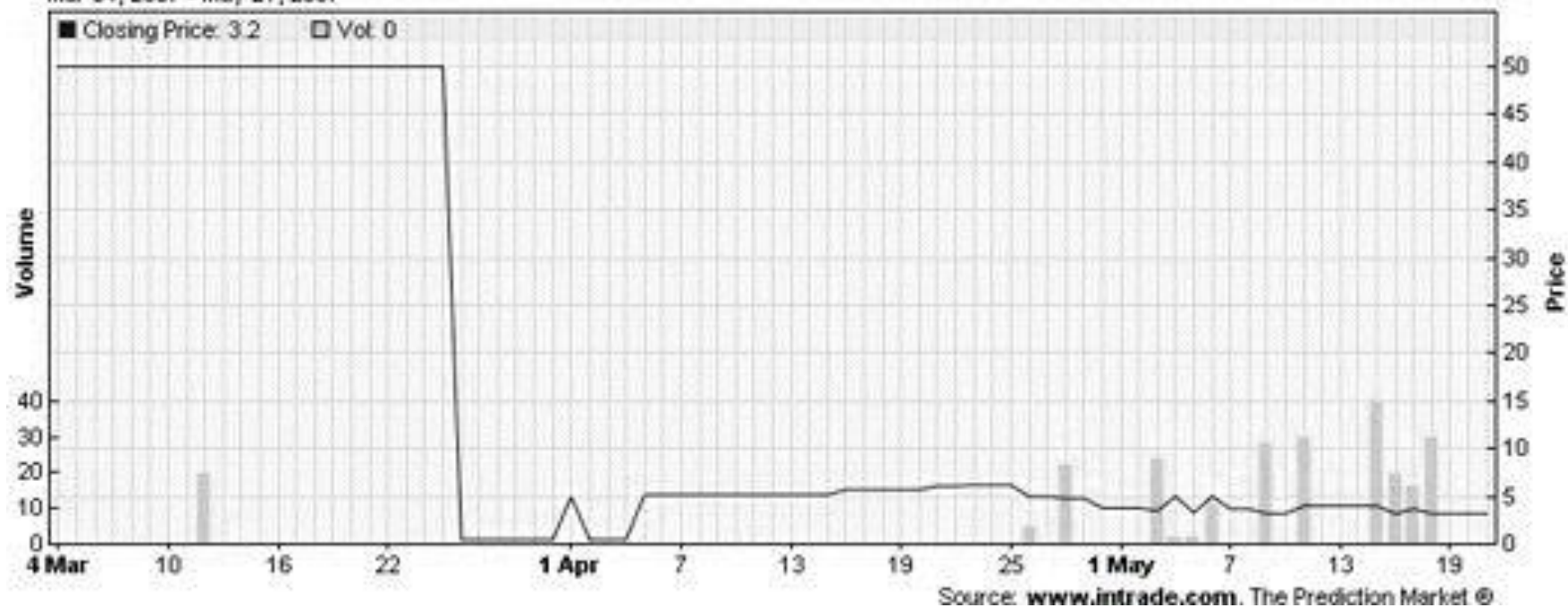
Jan 30, 2011 - Jun 28, 2012



Volume: \$200, or \$1000 (?)

HAMAS.ISRAEL.DEC07

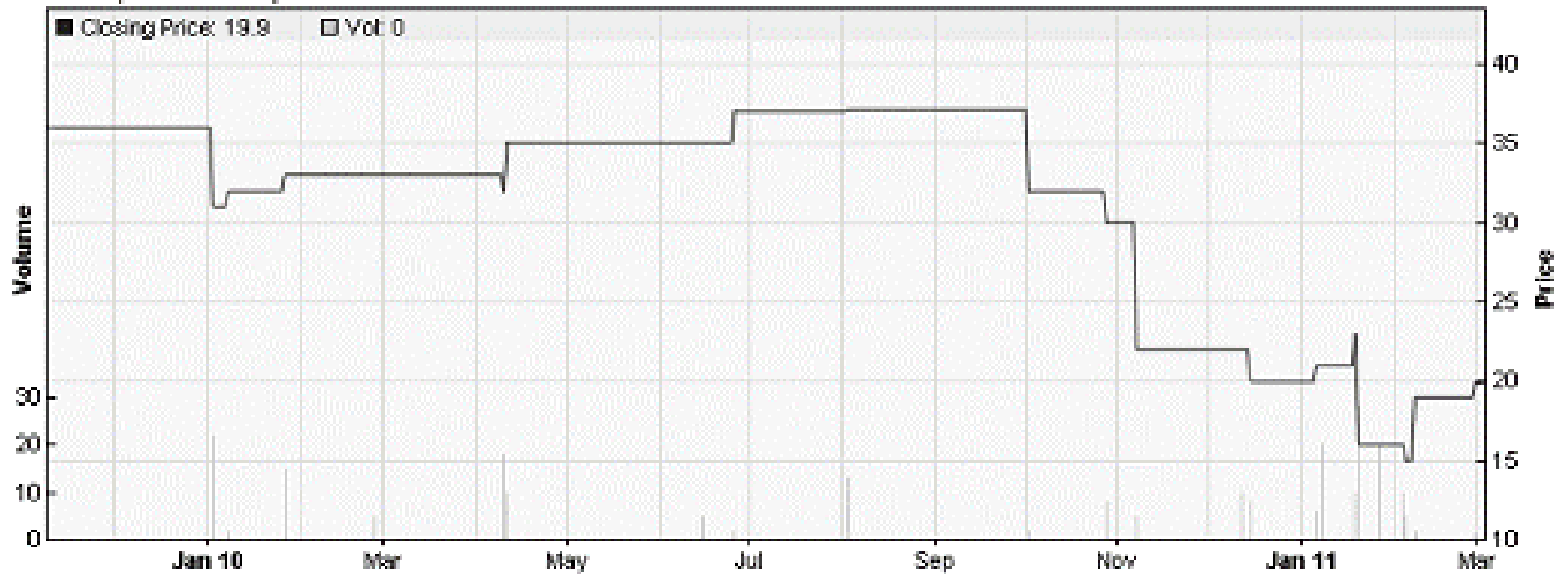
Mar 04, 2007 - May 21, 2007



Volume: \$40, or \$20 (?)

US RECESSION.2012

Nov 09, 2009 - Mar 03, 2011



Source: www.intrade.com ©

Volume: \$30, or \$60 (?)

“No Trade”

Prediction Markets “Fail” To Mooch

By [Robin Hanson](#) · July 19, 2012 12:00 am · [9 Comments](#) · [« Prev](#) · [Next »](#)

What is new about prediction markets? To many, the key new idea is

[Consensus Point](#) to set up) is very different – to answer key business questions, firms *pay* lots to create markets, to fund employee participants, and to subsidize market makers.

Alas there's been a lot more interest over the last few years in the get-work-for-free concept than in the pay-for-info concept. And more alas, recent discussions of “prediction market failures” are mostly on their failures to mooch. Case in point #1, Casey Mulligan today:

The efficient-prediction perspective presumes that the market exists on a scale large enough to create significant rewards for those with accurate predictions. Another perspective, “no-trade,” says prediction market participation will be low, if not zero, because traders suspect that a person would take the opposite side of their trades only because he had superior knowledge about the outcome. A market cannot survive if its only participants are “insider traders.”

“No trade”

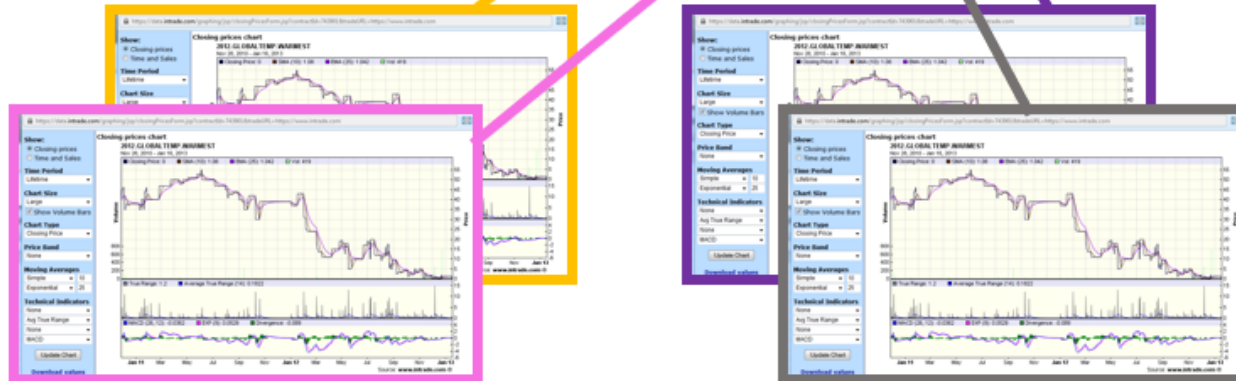
Worse With More States!

(9/9) Synthesis – Just Four Different Event-Derivative Markets

Will Candidate X be Elected?

Will American Voters
Earn Higher Incomes?

	Yes	No
Yes	.50	0
No	0	.50

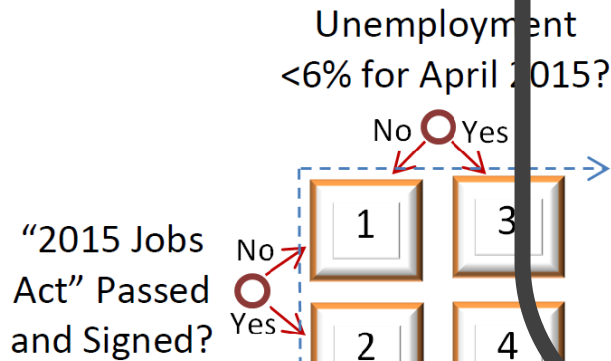


Need at least ***four*** buyer-seller-***pairs*** of people, to get a full table of prices!

Ideally: Many States



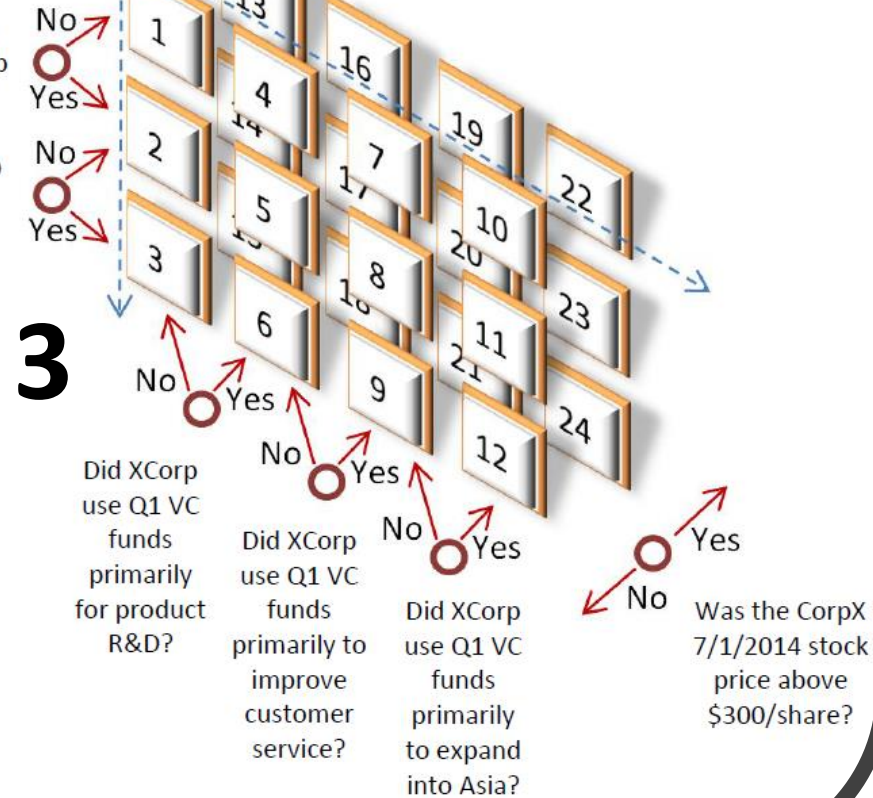
1



2

Did XCorp replace CEO Adam with Bob during 2014 Q1?

Did XCorp replace CEO Adam with Charlie during 2014 Q1?



Too many assets (24?!)
Will people really buy/sell each?

100% Synthetic (No Consumption) = VERY Worse

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“No trade”

- Consumption: insurance, recreational gambling.

Problem 2: No Attention

“No Attention”

- Consider:
 - **Election Outcome** sensitive to **Voter Turnout**.
 - **Voter Turnout** sensitive to **lack of knowledge**.
- PMs provide knowledge, and can influence outcomes.

People will be checking their phones on election day



Photo from MIT.edu

People will be checking their phones on election day

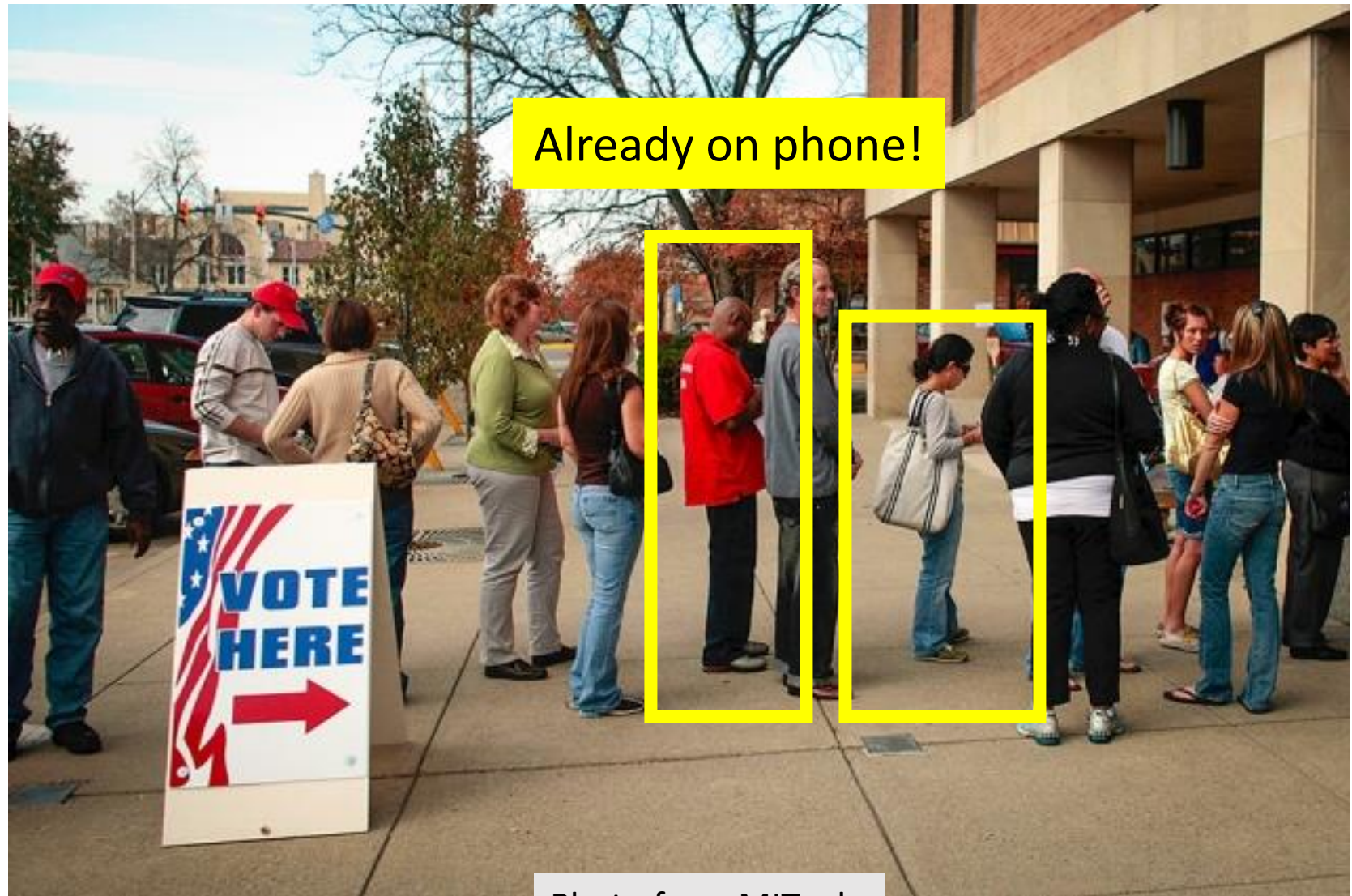
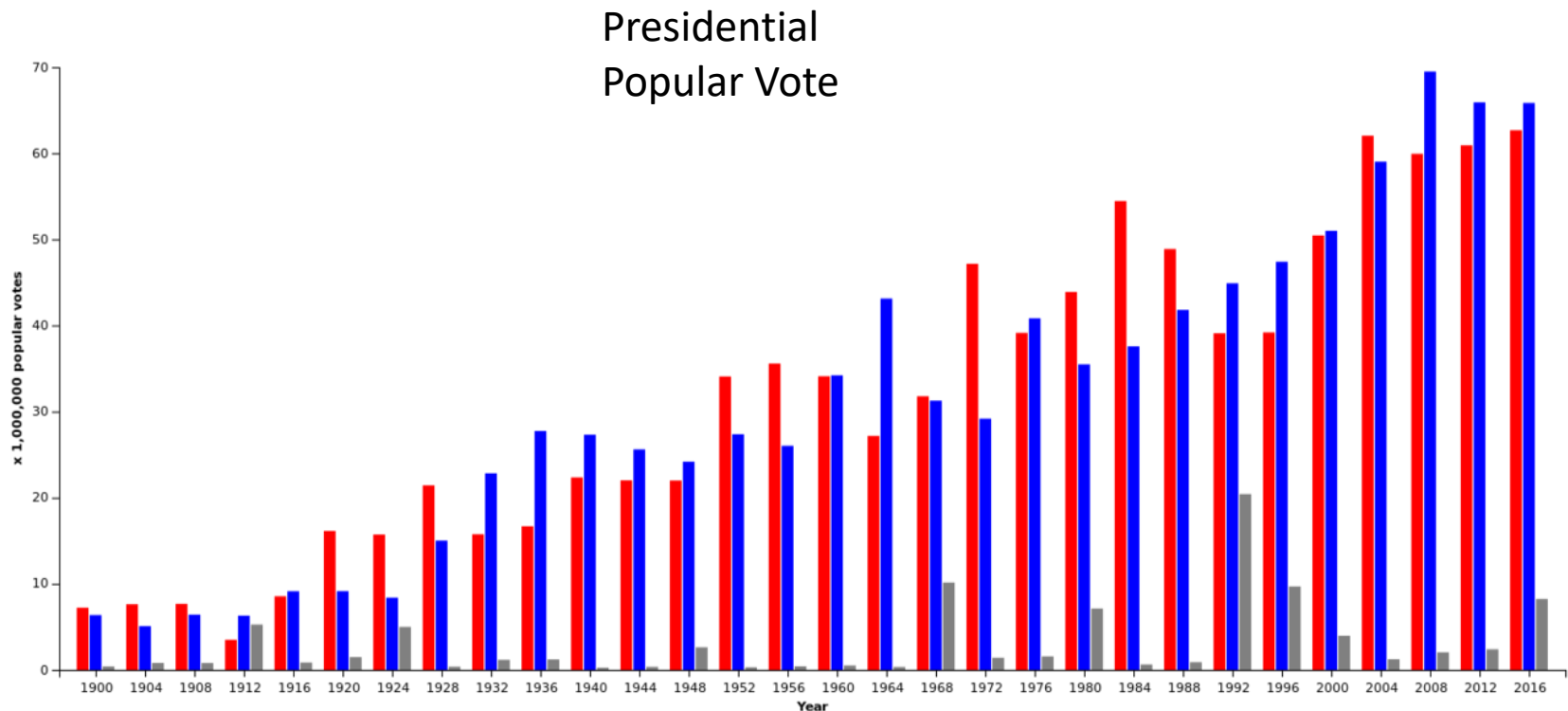


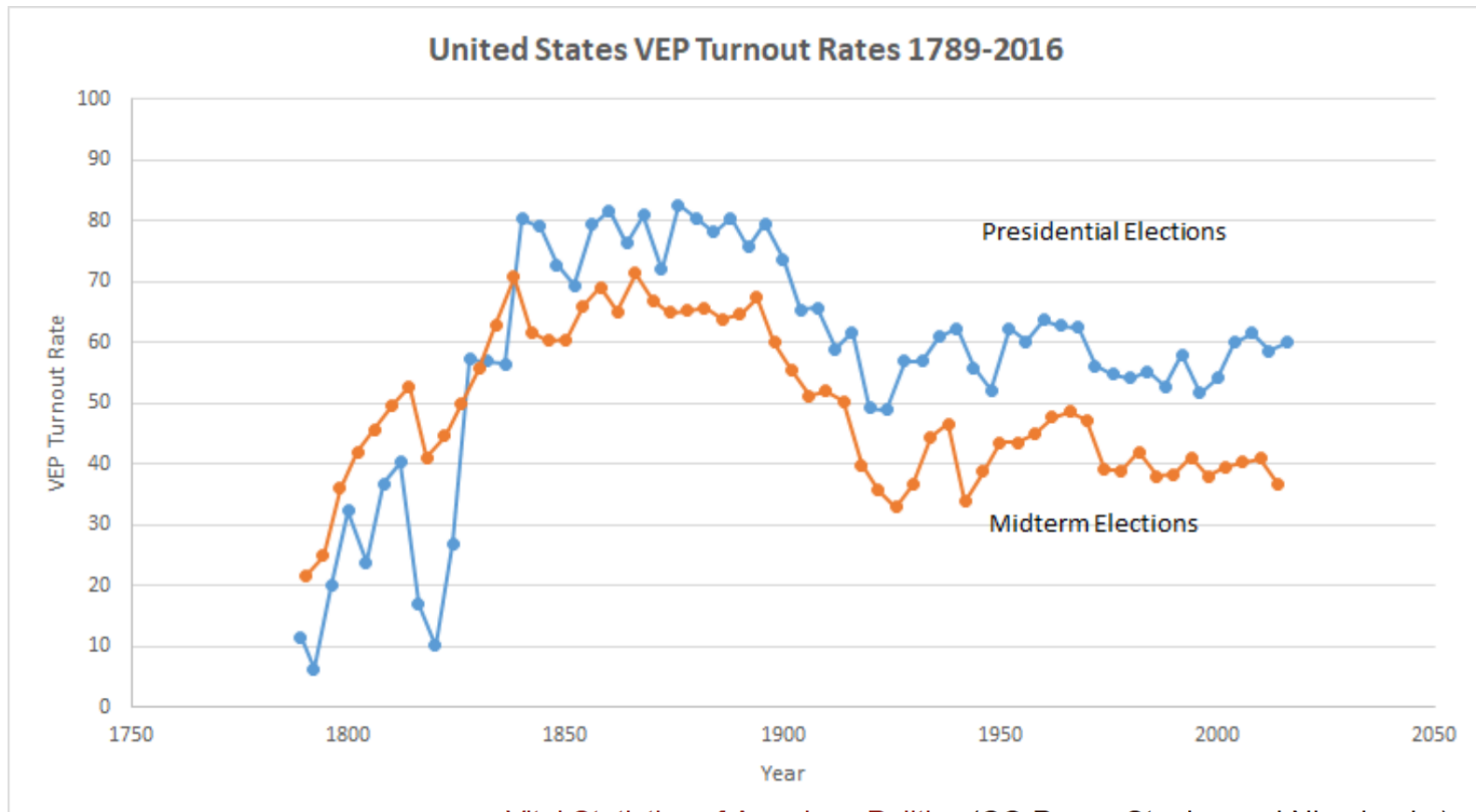
Photo from MIT.edu

Popular Vote – Victory Margins Are Very Narrow



Wikipedia Commons

Low Voter Turnout



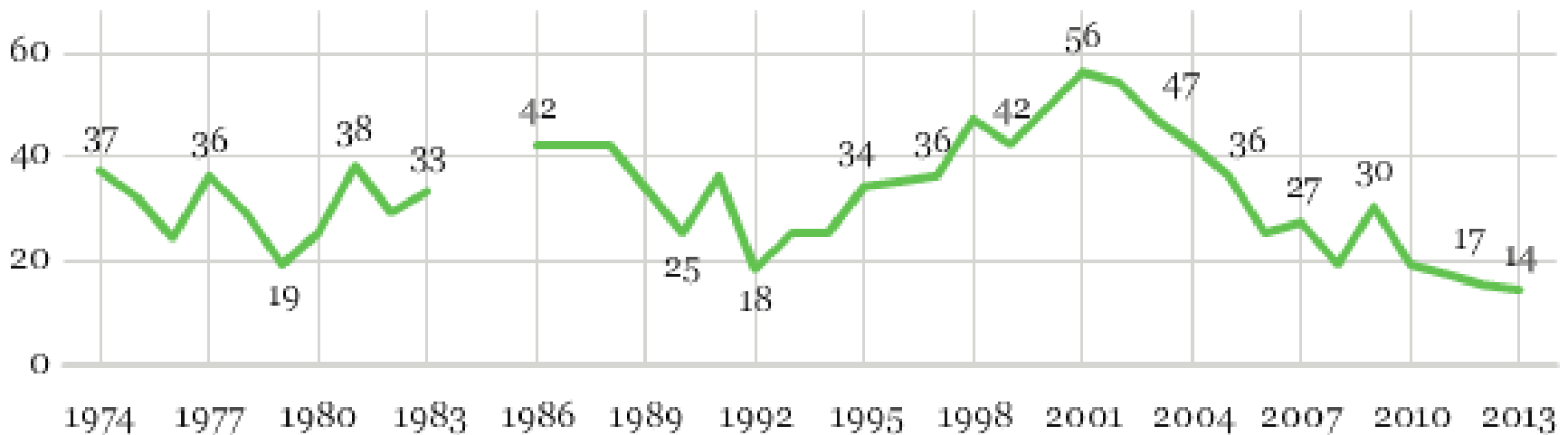
[Vital Statistics of American Politics](#) (CQ Press, Stanley and Niemi, eds.).

Congressional Approval

Congress' Job Approval Ratings, Yearly Averages

Do you approve or disapprove of the way Congress is handling its job?

■ % Approve

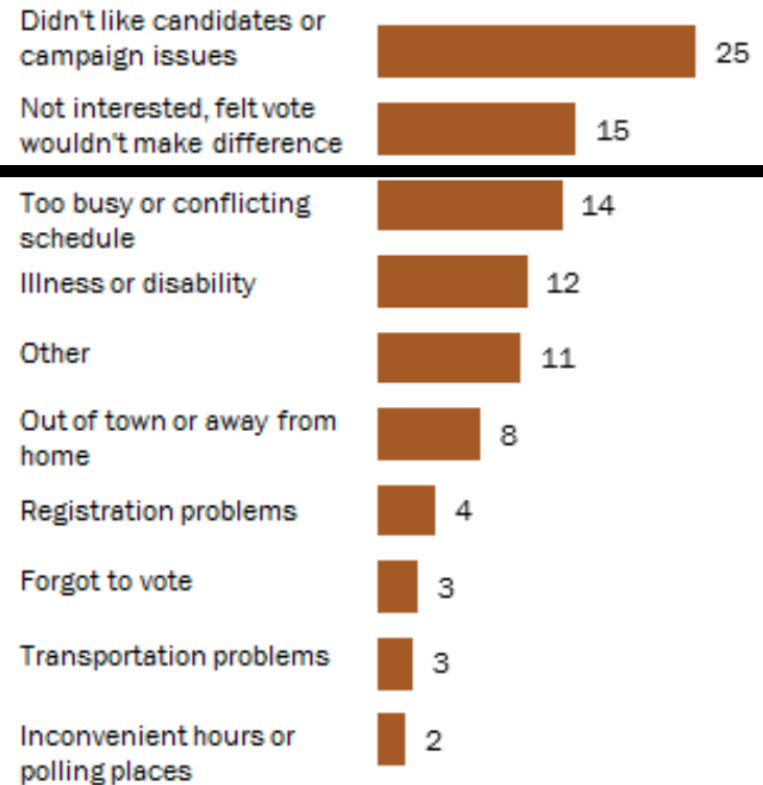


Note: Gallup did not measure congressional job approval in 1984-1985.

Why Turnout Low: Voters Admit Feeling Overwhelmed

Why registered voters say they did not vote in 2016

Among registered voters who did not vote, % who said main reason was



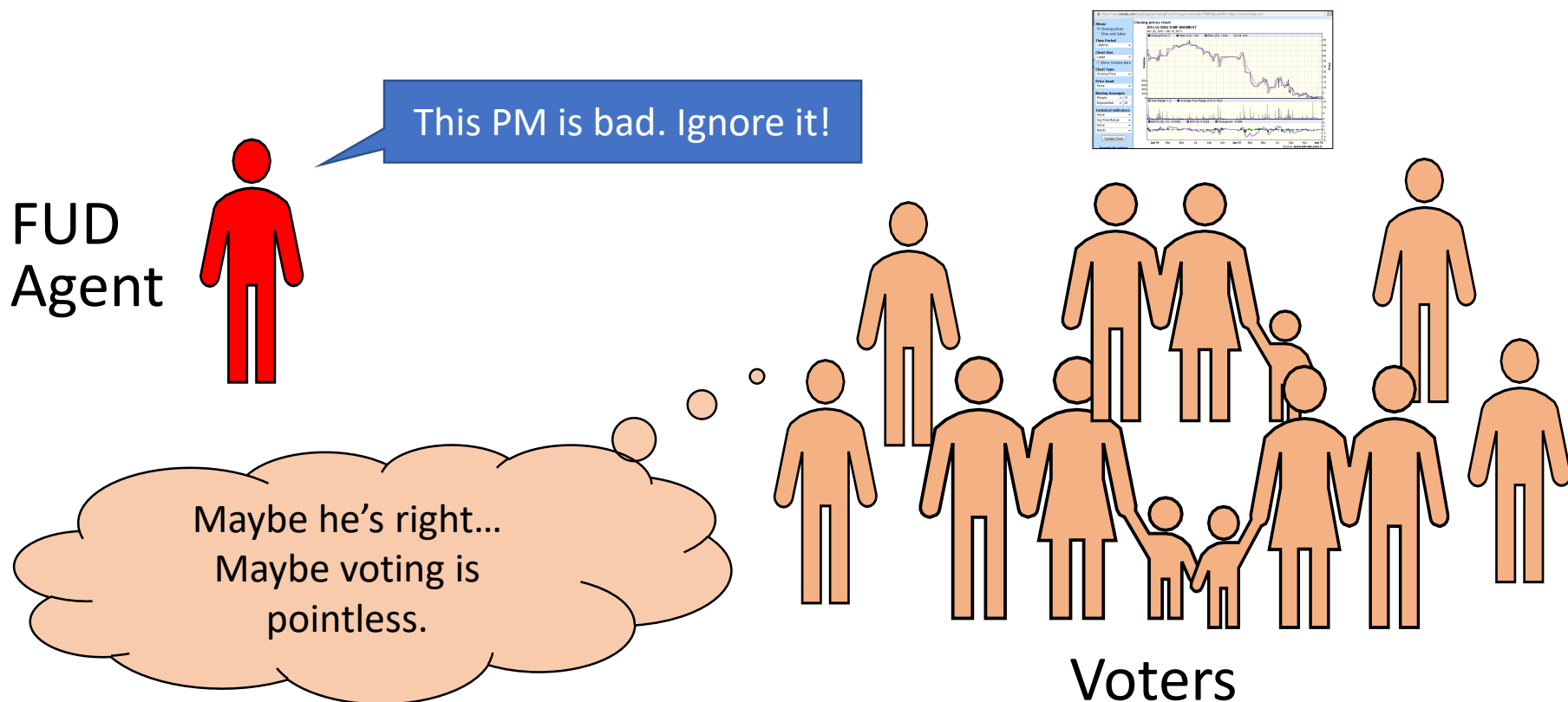
Note: "Don't know," "Refused," "Bad weather conditions" and "No response" not shown.

Source: Pew Research Center analysis of the 2016 Current Population Survey, November Supplement.

PEW RESEARCH CENTER

At This Point

- Critics (and/or tyrants) will have to say either:
 1. Ignore all PMs, or
 2. PMs are great, but ignore this one specifically.



Track Record of Accuracy

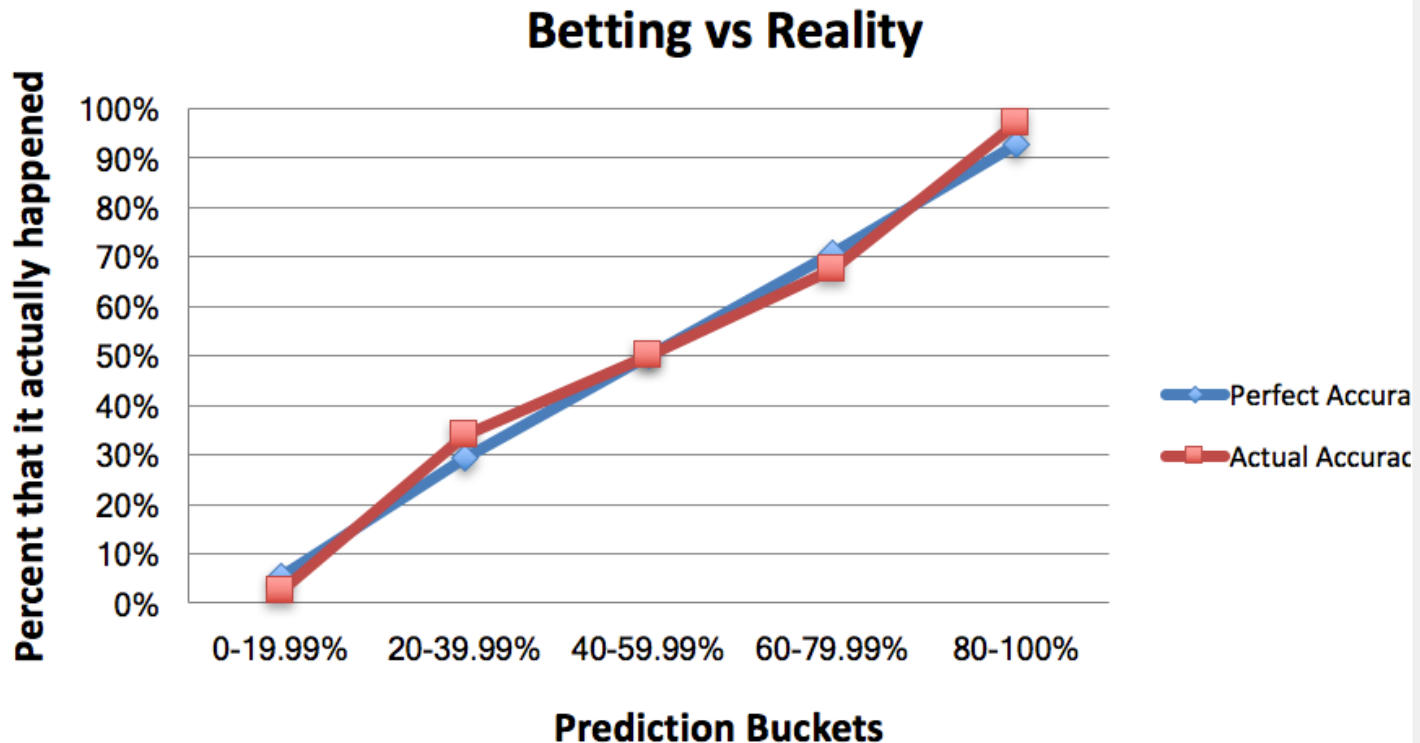
cross dozens of races and states in 2016

How accurate has this site been?

When a candidate favored by bettors loses, it's easy to fall into the trap of thinking the bettors were "wrong". But remember that when bettors give someone, for example, a 65% chance to win -- that also means the bettors give the person a 35% chance to *lose*.

The following graph shows how closely the betting tracked reality.

The blue line shows what predictions would look like if they were perfect. Where the red line differs from the blue line, the predictions were off somewhat:



Very Old Idea!

The Long History of Political Betting Markets: An International Perspective

Paul W. Rhode (University of Michigan)
Koleman Strumpf (University of Kansas School of Business)

March 2012

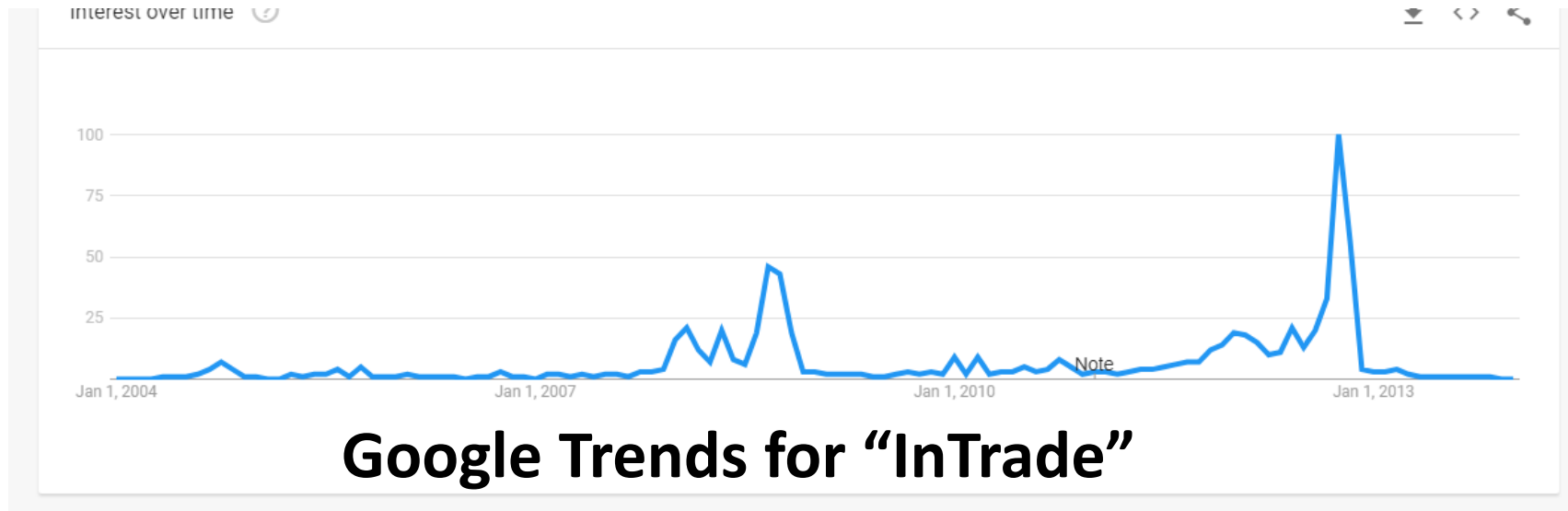
Abstract:

Political future markets, in which investors bet on election outcomes, are often thought a recent invention. Such markets in fact have a long history in many Western countries. This paper traces the operation of political futures markets back to 16th Century Italy, 18th Century Britain and Ireland, 19th Century Canada, and 20th Century Australia and Singapore. In the United States, election betting was a common part of political campaigns in the pre-1860 period, but became increasingly concentrated in the organized futures markets in New York City over the post-1860 period.

- “Gamblers have also long wagered on the selection to offices in the Catholic Church. Quotes of betting odds on papal succession appear as early as 1503 when such wagering was already considered “an old practice.””
- “As far back as the reign of William the Third, foreigners had observed that, on matters great and small, the only sure test of English [UK] opinions was the state of the odds.”
- “William Cooper of Cooperstown, New York enjoyed the strong betting backing of his friends during his race for Congress in 1796.”

"From what I see of the betting ... I do not think that Mr. Roosevelt will need my vote. I am sure of his election." -Andrew Carnegie, 1904

“Natural Popularity”



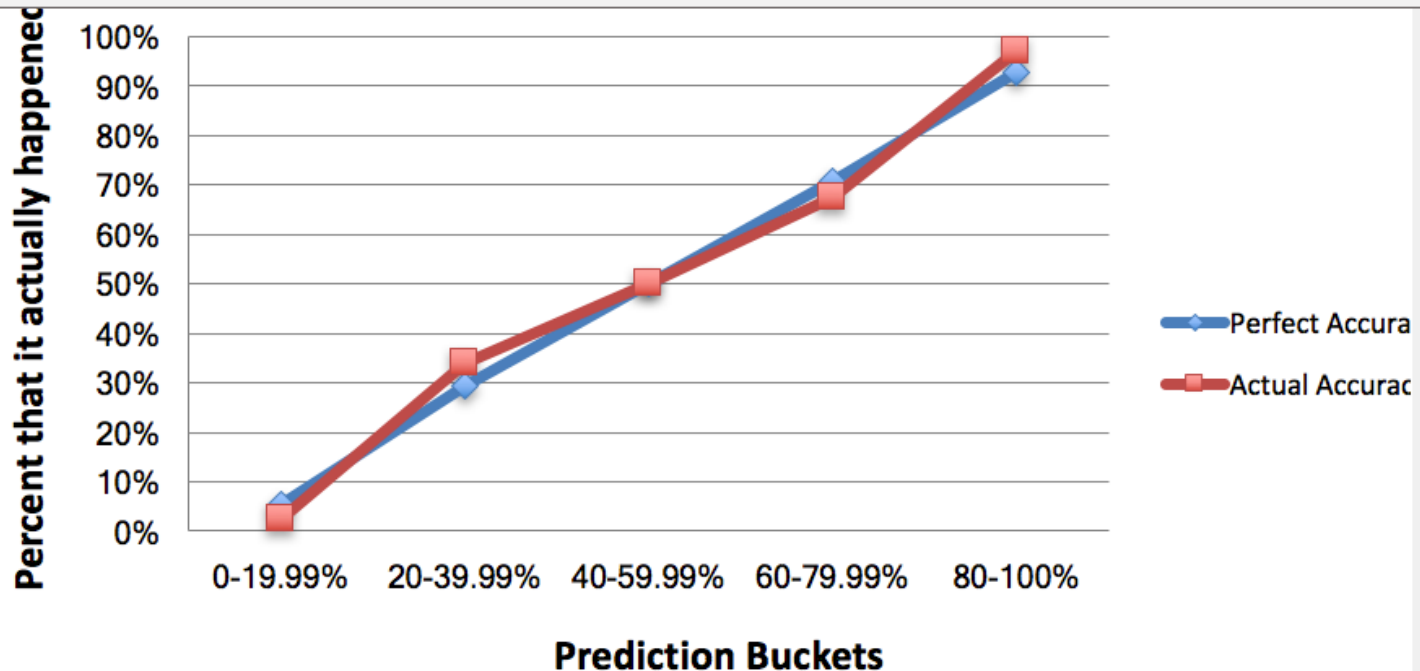
TV Appearances (esp during ‘08 , ‘12)



“Ramp it up” Over Time

Lowbrow → Highbrow

- Sports (SuperBowl, March Madness)
- E-Sports
- Arts (Oscars, Tonys).



PMs Evade Bias/Capture

- Most events have an unclear interpretation leading to bias.
 - Debates are one example.
 - Democrats are certain that the democratic candidate “won” the debate. Republicans are certain that the republican candidate won.
- PMs have only one interpretation (expectation of candidate’s performance), and it is the same for everyone.

Tiresome Politician Rhetoric Is Irrelevant

- As this idea becomes influential, politicians will start competing on these metrics.
- But in order for their numbers to go up, they'll need to actually **hit** the target in reality.
- For example: Politician could announce that they want everyone to die, and plan to kill everyone, but unless traders believe that the politician can follow through with this plan, the 'deaths' numbers won't budget an inch.
- Layperson already knows that politicians are liars. (Will prefer this.)

Proving Market Health

Consensus Point to set up) is very different – to answer key business questions, firms *pay* lots to create markets, to fund employee participants, and to subsidize market makers.

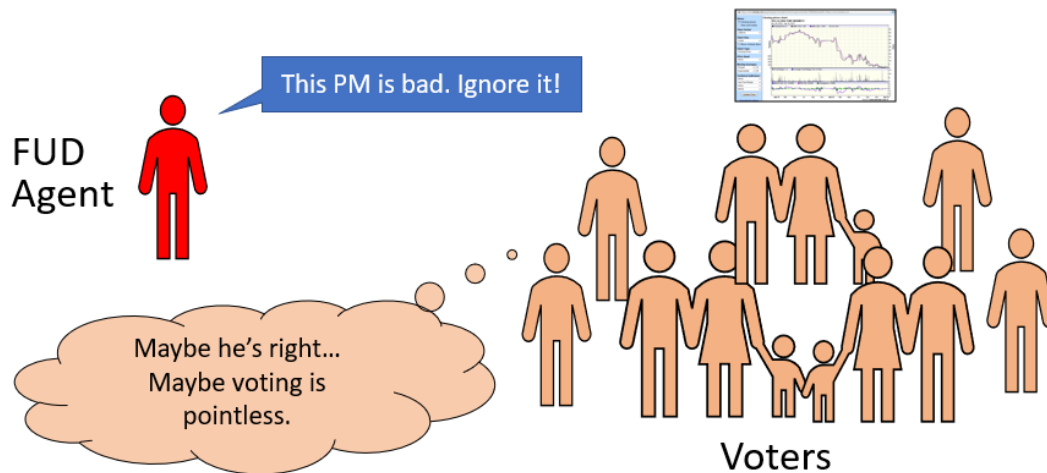
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"No trade"

- "Standing Army" of automatic traders

2. PMs are great, but ignore this one specifically.



- Market such that \$X can always be earned, if prices are wrong....even if no one else on Earth is trading!

“No Trade”

Prediction Markets “Fail” To Mooch

By [Robin Hanson](#) · July 19, 2012 12:00 am · [9 Comments](#) · [« Prev](#) · [Next »](#)

What is new about prediction markets? To many, the key new idea is

[Consensus Point](#) to set up) is very different – to answer key business questions, firms *pay* lots to create markets, to fund employee participants, and to subsidize market makers.

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“No trade”

Hanson's Response:
Instead of expecting everything for free, why don't you buy the information?

No, a market *can* single-task, with no other function than prediction, and no other trader motive than selfish financial profit, *if* someone who wants the info will pay to subsidize the market. It is only when you want people to answer your question for free that you'll have to piggyback on their having some other reason to trade.

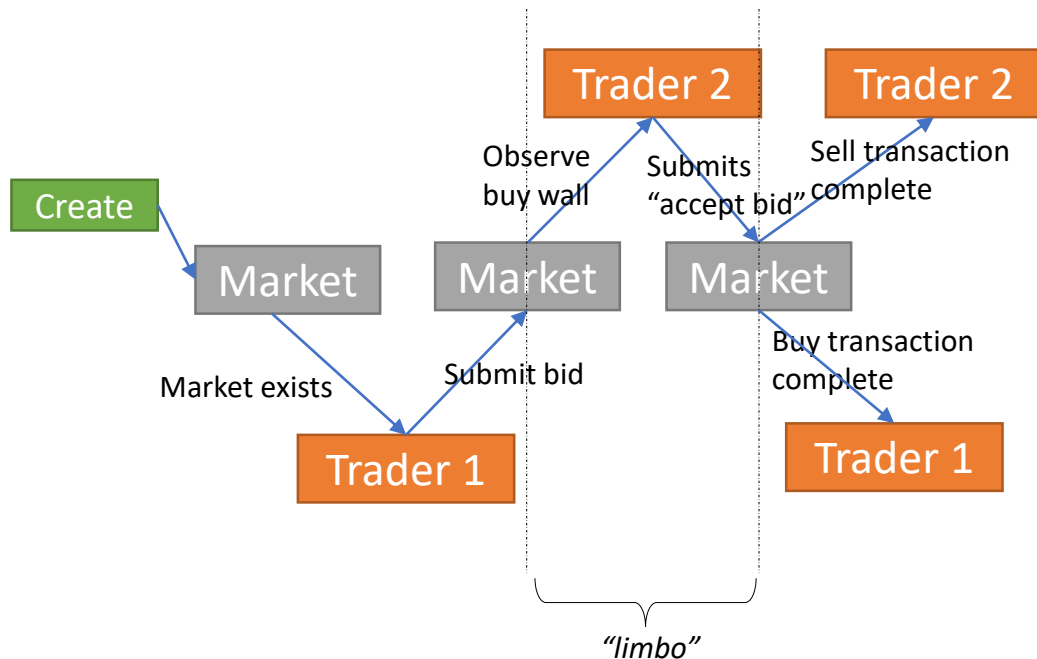
Of course there's no guarantee that your willingness to pay for some info exceeds other folks' cost to supply that info. Supply and demand curves need not intersect at a positive quantity. But that's hardly a failure of an info exchange mechanism.

How? By using a MSR, with a “sacrificial trade” that loses against all outcomes at once.

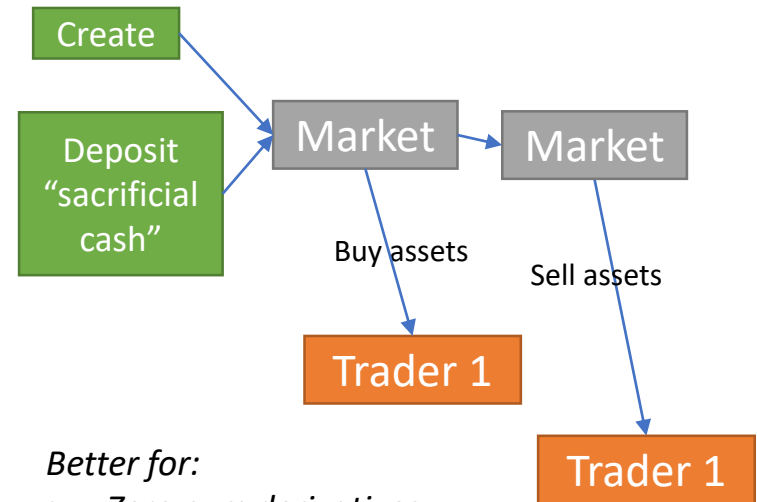
Permanent Liquidity (via MSR)

- No “offers” – ie, No Bids/Asks.
- No interaction between buyer/seller.
(Instead, traders interact w/ protocol.)
- No “limbo”

Usual Timeline (“Double Auction” Market)



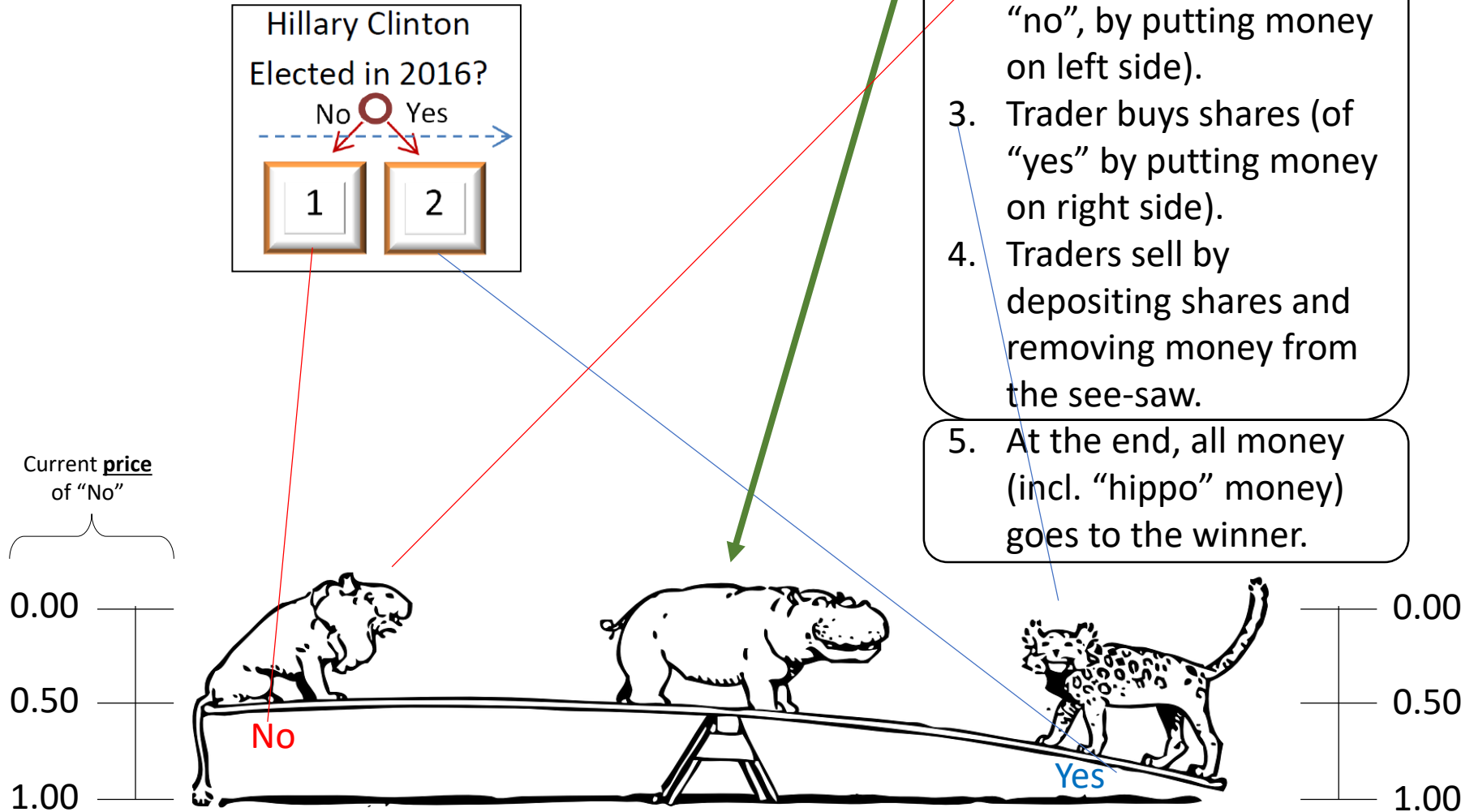
New Timeline (“Scoring Rule” Market)



Better for:

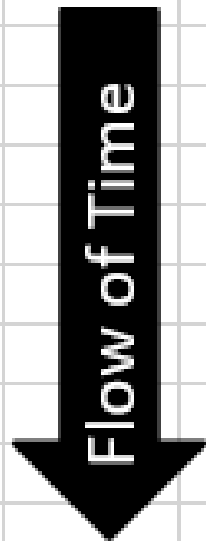
- Zero-sum derivatives
- Blockchains

See-Saw Metaphor



Permanent Liquidity

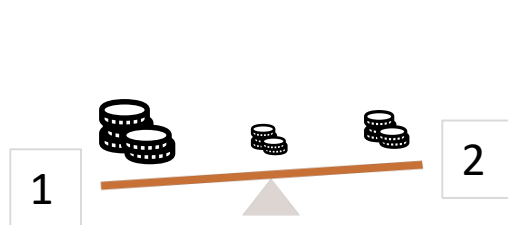
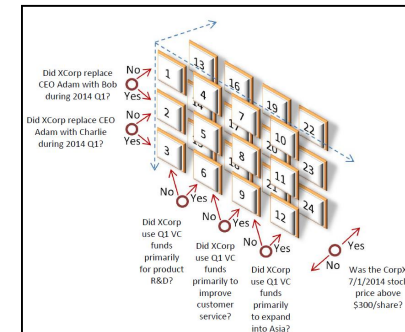
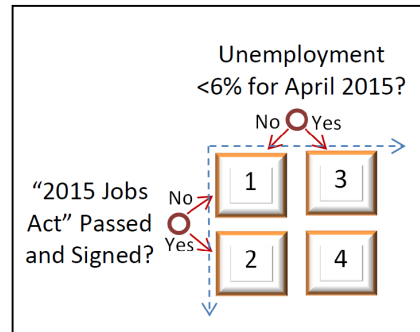
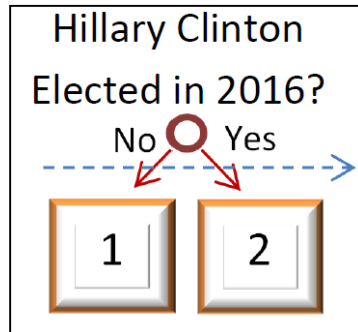
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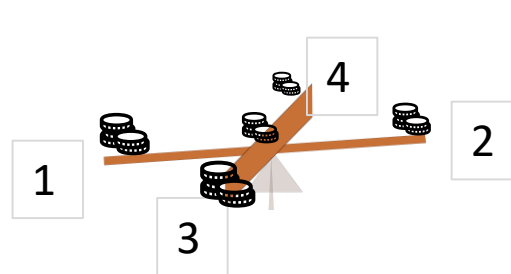
Time	Shares Outstanding		LMSR (Market Account)	Update Cost (User Pays)	Interpretation
	a=0	a=1			
			0		
1	0	0	4.8520	4.852030	
2	1	0	5.3699	0.517842	Bought 1 Share
3	1	6	8.7893	3.419407	Bought 6 Shares
4	18	6	19.1591	10.369869	Bought 17 Shares
5	18	18	22.8520	3.692882	Bought 12 Shares
6	32	18	32.8885	10.036466	Bought 14 Shares
7	32	30	35.9232	3.034721	Bought 12 Shares
8	39	30	40.7086	4.785379	Bought 7 Shares
9	39	43	46.1339	5.425344	Bought 13 Shares
10	57	43	57.8885	11.754556	Bought 18 Shares
11	57	61	64.1339	6.245444	Bought 18 Shares
12	61	61	65.8520	1.718090	Bought 4 Shares
13	61	40	61.3401	-4.511919	Sold 21 Shares
14	42	40	45.9232	-15.416894	Sold 19 Shares
15	42	9	42.0625	-3.860733	Sold 31 Shares
16	42	4	42.0307	-0.031826	Sold 5 Shares
End	42	4	42.0307	Account Balance	Market resolved
			42.0000	Redemptions	Individuals redeemed

Full collateralization.

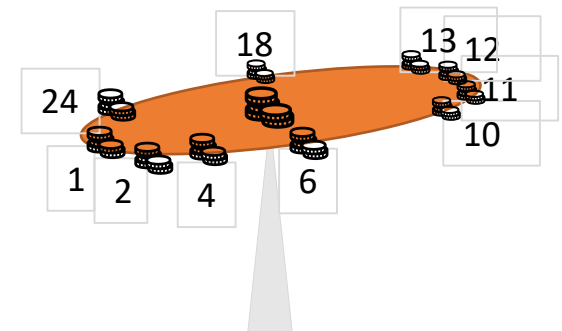
See-Saw → Tray



2 states



4 states



n states

Playing To Our Strengths

- Weaknesses:

- Hard to leave the two party system.
 - Idealism/Reform hampered by collective-action problem.
 - Especially hard wrt campaign finance / cronyism / corruption.
 - Tweet about 1 mill, \$100, if more than 10% pick a lower number you get nothing.
- Near-infinite variety of possible reforms → disunity, diffusion of effort; self-fulfilling futility.

- Strengths

- Popular – Recall the low turnout rate.
- Better Ideas

“Freedom Fund” – Where to get the money?

- When the time comes, it might be easy.
- Draw a comparison to three other types of donation activity:
 - Donations to Presidential Candidates
 - SuperPAC donations
 - Donations to Annenberg Political Factcheck
- Funding raised:
 - (Q1 2019 : BS \$18.20M 6wks; KH \$12M; PB \$7M; EW \$6M)
 - SuperPACs: \$1.79 **Billion** in F.Y. 2016
 - Annenberg Political FactCheck Charity: \$1.16 million in FY 2016

It Might Be Easy

1. Frequency – only once every 2 / 4 / 6 years.
2. Amount – One market can hold liquidity for $\log(n)$ elements; each element needs to have only enough to be persuasive to most voters; most voters have household net worth of around 50K.

Total needed, all-inclusive, could be as little as: \$5 million / 4 years

3. Unification – All dissatisfied (or merely concerned / patriotic)
4. 100% Efficiency – All donated funds contribute directly to the reform purpose. No overhead, none goes to me, none can possibly be wasted, blockchain-enforced.
5. Uncensorable, Private, & Attributable – No one can stop you from donating; 100% on-blockchain; can add an [OP Return] message to your donation.

Thank You!

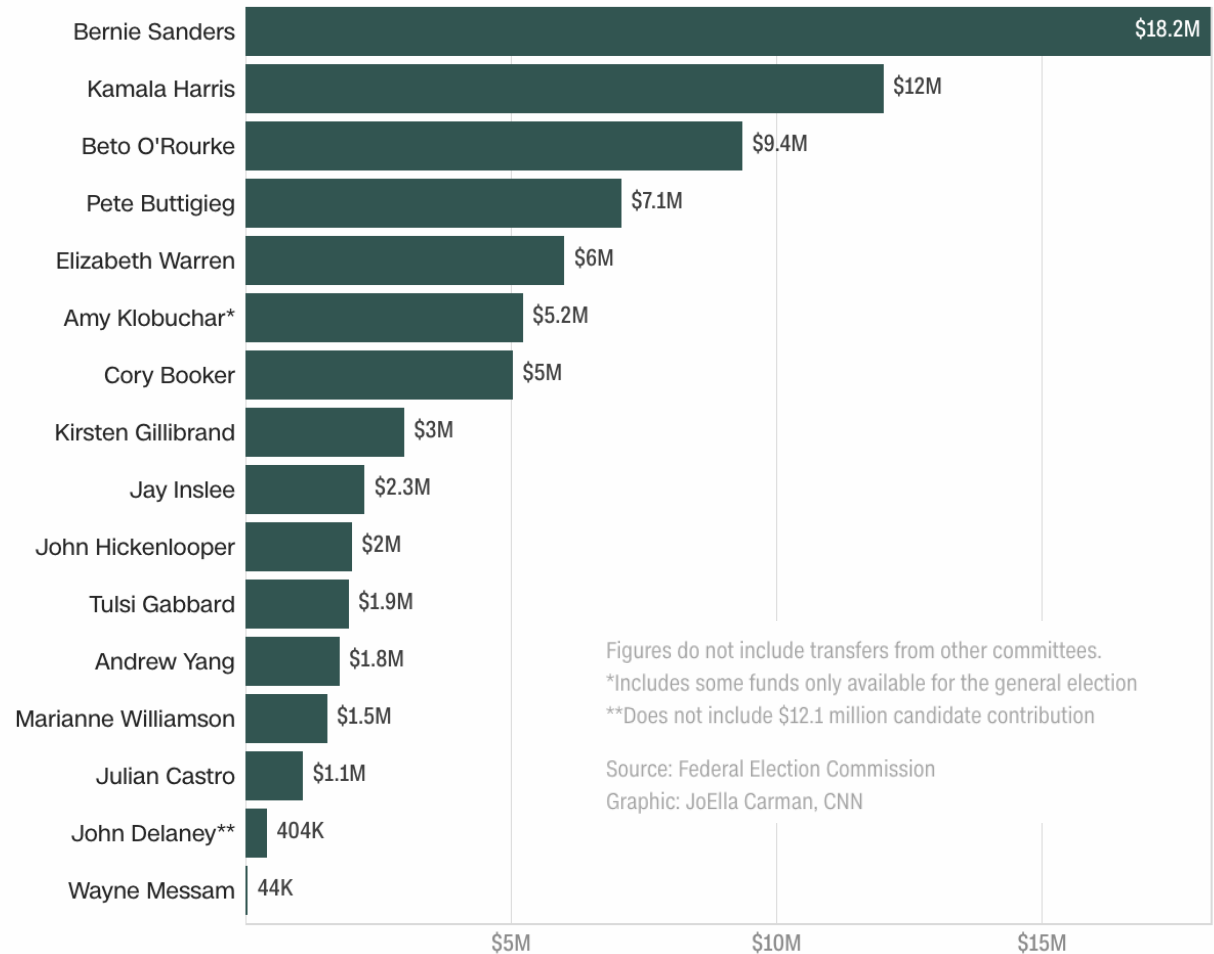
Questions?

	Politician's Campgain	SuperPACs	NonProfit Orgs	"B"-Amping
Funds Raised				
Unity of Purpose				
Efficiency				
Privacy / Censor-free				

Funds Raised by Democratic Candidates in Just a Single Quarter, FEC

Bernie Sanders leads the pack in early fundraising

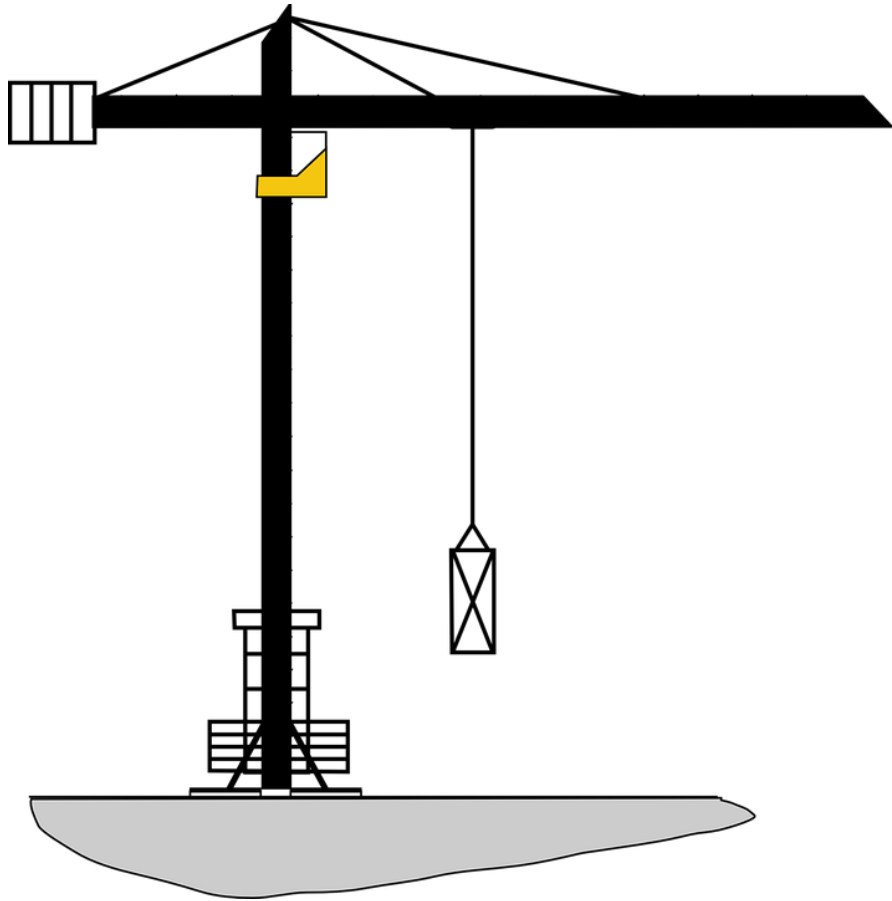
Amount raised from individuals by each Democratic presidential candidate in the first quarter



- Skyhooks
 - Persuasion
 - Switching Voting
 - Some kind of (one-time) revolution

Crane. Not Skyhook

Crane



Lift via: Physics
Xfers weight to different part of ground.

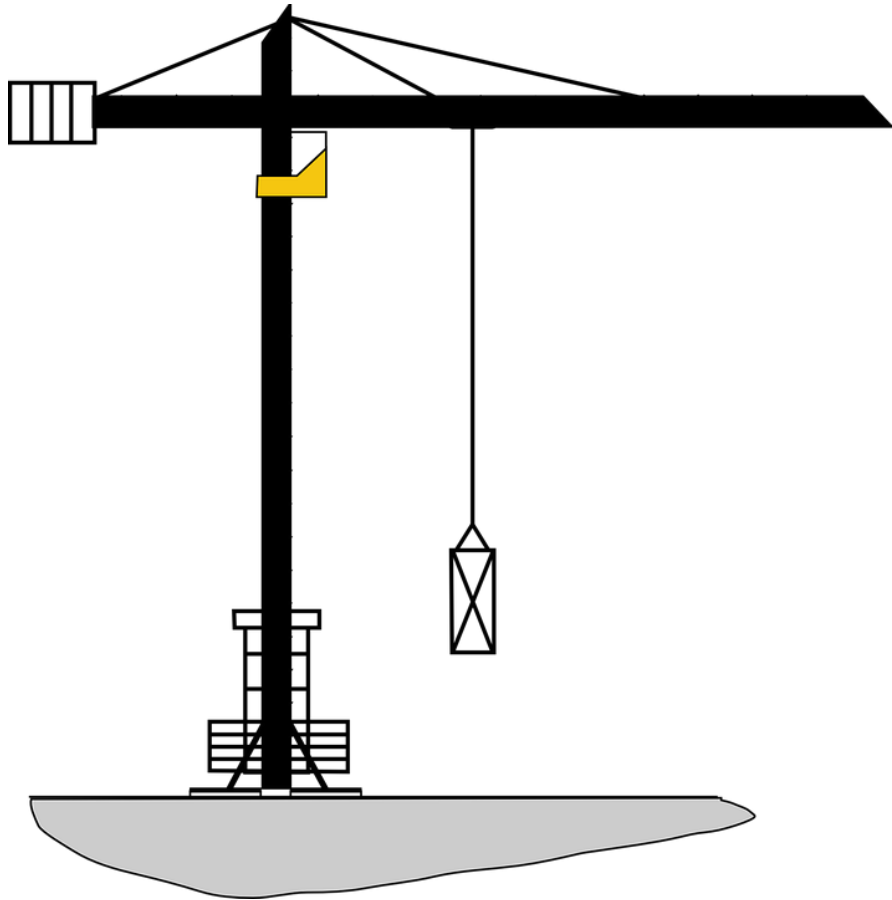
Skyhook



Lift via: Magic
Unexplained force.

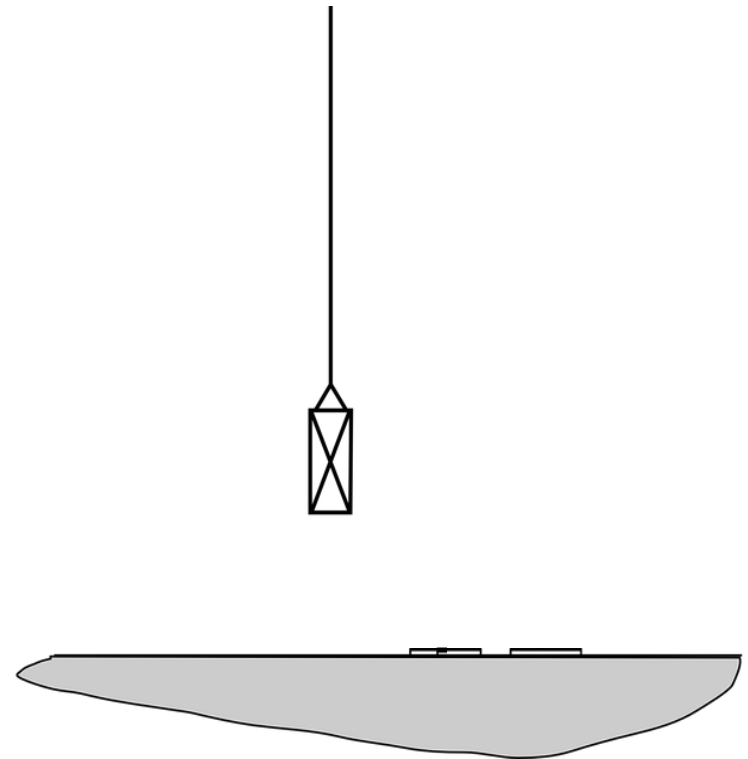
Crane. Not Skyhook

Crane



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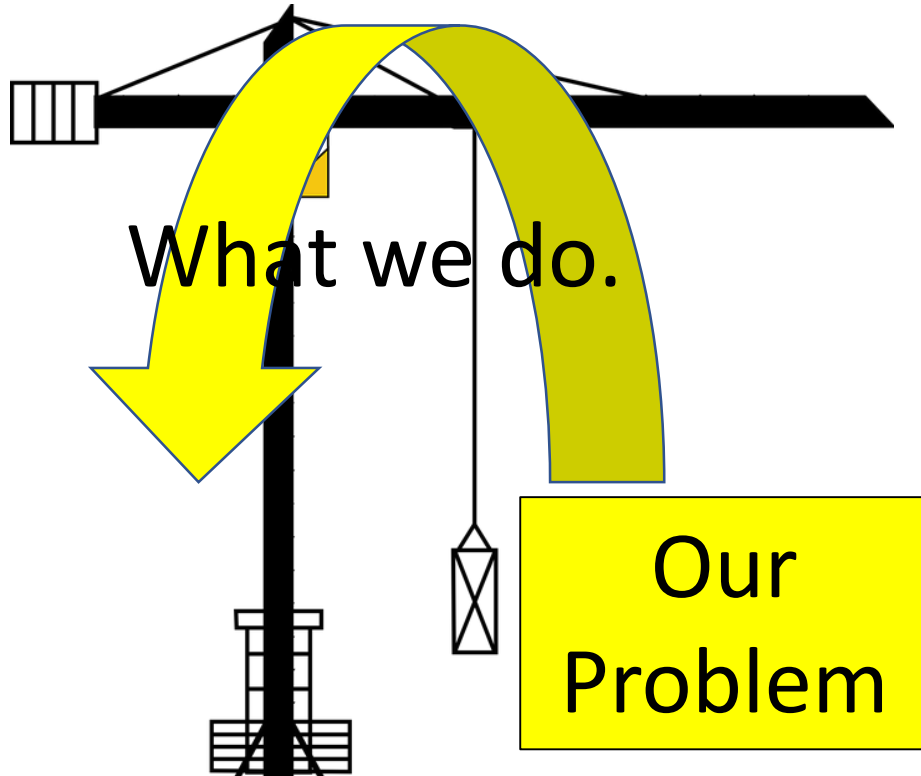
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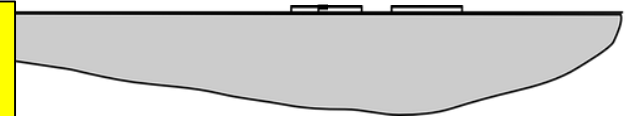
What we do.

Our
Problem

Everything that needs to
change, we can do unilaterally.

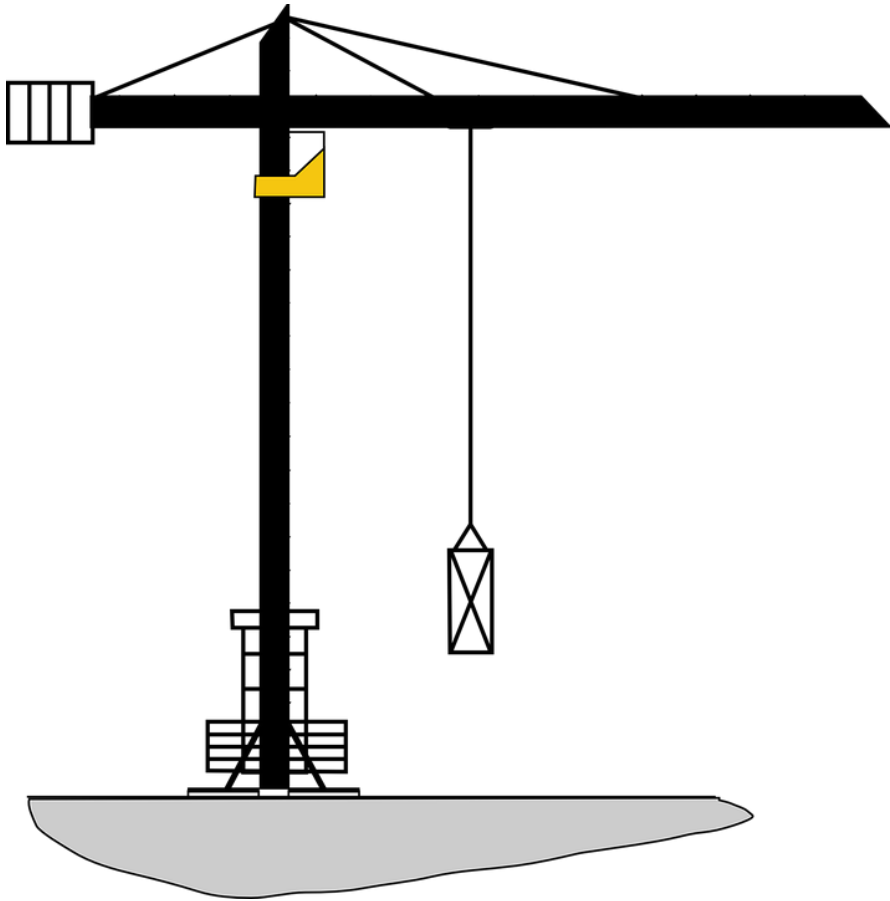
Things other
people do.

(Actually they
wont do them.)



Lift via: Magic
Unexplained force.

Crane



Skyhook

