
FAQ PREDICTION MARKETS

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How do prediction markets work?

Prediction markets work on the basis of collective intelligence, which means that the accumulated knowledge of many individuals is better than the one of a single expert.

Prediction markets work on the same principles as real stock exchange markets.

The various outcomes of an event are traded as shares. In the case of political prediction markets political parties are traded as shares, with the actual goal to predict the outcome of the election.

The principles of stock exchange apply: buy low, sell high and increase your capital. Each user starts with a virtual amount of money which he can trade with. The main objective of the trader is to maximise his capital via making the right predictions.

The value of the shares reflects the accumulated anticipation of the final result of all users on the market.

At the end of the game all shares are bought back by the bank at the value that results from the market conditions.

What are examples of collective intelligence?

In 1906 the British scientist Francis Galton discovered this phenomenon more or less by mistaken on a rural market. He had 800 people with different educations guessing the weight of an Ox. The average guess was 1197 pounds and surprisingly the exact weight was 1198 pounds. While his actual goal was to prove the stupidity of the masses the outcome was the complete opposite, the intelligence of the masses.

In the popular TV Show "Who Wants to be a Millionaire" 91% of the audience gets the right answer, where in an experiment with experts under the pressure of time only 65% of the questions were answered correctly.

This and numerous other experiments show the existence of collective intelligence

Which hypothesis is fundamental for prediction markets?

The economist and Nobel Prize winner Friedrich August von Hayek came up with the theory that competition on markets is the optimal mechanism to achieve an efficient allocation.

This is also true if all the individuals in the market only got incomplete information.

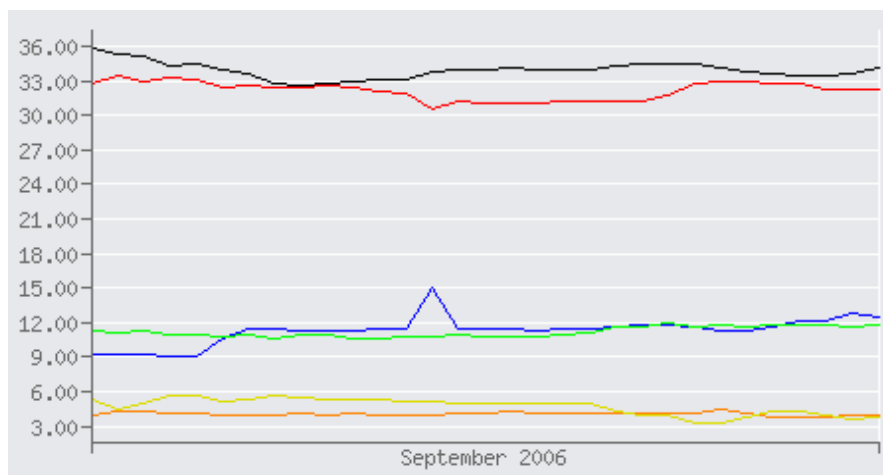
The possibility to aggregate information on markets led to Hayeks therorie that markets are the best model for predictions.

How high is the deviation in pro:kons projects?

The pro:kons political prediction market for the election of the Austrian Council in 2006 showed the following result:

	offizielles Ergebnis	ProKons (30.09.06)		News/Market (27.09.06)	
		Ergebnis	Abweichung	Ergebnis	Abweichung
ÖVP	34,33%	33,65%	-0,68%	38,00%	3,67%
SPÖ	35,34%	32,59%	-2,75%	35,00%	-0,34%
FPÖ	11,04%	12,22%	1,18%	10,00%	-1,04%
GRÜNE	11,05%	11,50%	0,45%	10,00%	-1,05%
BZÖ	4,11%	3,96%	-0,15%	3,00%	-1,11%
MATIN	2,80%	3,84%	1,04%	3,00%	0,20%
Andere	1,29%	2,24%	0,95%	1,00%	-0,29%
<i>MAE (mean average error)</i>			<i>1,03%</i>		<i>1,10%</i>

The graph below shows the share value during September for the 5 political parties traded.



What is the difference between surveys and political prediction markets?

One of the major differences is that on political prediction markets the trader is trying to predict for whom the general public is going to vote for rather than expressing his own political preferences.

Or: Different to standard surveys the question for the success orientated trader is not "what are you going to vote?" but "what do you think the public is going to vote?"

Surveys show the actual political opinion quite well, but the result is very much dependent on the point of time the survey took place. This means they also do not allow a long term prognosis.

Every prediction turns a representative survey into a not representative view of an expert.

Political prediction markets on the other hand only need the determination of the voluntarily participating trader.

There is no refusal and no dependency of margin of deviation on the number of participants.

The critical mass is lower and with as few as 30-50 traders good predictions can be made.

Why are prediction markets interesting for the individual?

The reason for the continuous trading on the market is that single users base their decisions on different subjective information and also interpret available information in a different way which results in congruent future expectations.

This way the stock exchange simulations almost playfully result in their main goal, the prediction.

The aspect of playing a game is not a downside but so much more in most of the cases the base for a successful result of the simulation and the prognosis.

The success in comparison to betting games or surveys is also based on the continued trading of the user. Playing the simulation like a game makes it easy to involve the trader in these time intense experiments which not a lot of people would be willing to do for standard scientific surveys.

Are prediction markets easy to manipulate?

Basically there are two types of manipulations.

- Users are trying to gain more money and get better rankings with illegal actions.
- Users are trying to manipulate values of shares at the cost of making personal losses.

The way political prediction markets are working makes it impossible to manipulate values of shares in the long run.

We could prove in past projects that values of shares have a very high resistance against these kinds of manipulations and that it was not possible for the user to change values in the long run.

As pro:kons projects are running since 1999 we have developed a variety of security mechanisms to prevent and detect manipulations at an early stage.

Can a single destructive user destroy the reputation of prediction market?

Brüggelambert describes the "destructive" user as a person that gets enjoyment out of making silly decisions to destroy the experiment.

From former market observations we have learned that this type of user, if even existing, is only a very small minority.

Prediction market are designed as zero sum games, which means that absurd decisions of some users are a base for other users to gain profits.

These scenarios are also an incentive for users to observe the market closely and makes the markets more attractive.

What is the typical motivation for the participants / user?

Fact is that only someone who has the motivation to participate in the market on his own will (volunteer, self selected trader), bring the necessary willingness / passion for quality information processing.

From surveys made in former projects we have learned that the motivation to participate was firstly political interest, secondly curiosity and thirdly enjoying to play the game.

Far behind was actually the motivation to win a prize.

What is a political prediction market?

On a political prediction market futures are traded to predict the outcome of a political election.

The values of the shares, which represent political parties, are defined via offer and demand.

The value of one share represents the prognosis of the election result of one party at any given time.

The aim of the virtual stock exchange is to reflect the expectations of the participating user into one exact general prognosis utilising the law of offer and demand.

When was the political prediction markets model used for the first time?

The first political prediction markets model was used in 1988 at the University of Iowa. Professor Robert Forsythe and his colleagues were so astounded by the result they predicted during the elections of the US President that their series of experiments kept going to the current day. The following statistics show the accuracy of the result in relation to the result of the election of the US President in 1988.

Organisation	Datum	% Bush	% Dukakis
CBS / New York Times	November 2-4	48	40
CNN / USA Today	November 3-6	52	42
Gallup	November 3-6	53	42
NBC / Wall Street Journal	November 1-5	48	43
IPSM*	November 7	53,2	45,2
Election	November 8	53,2	45,4

*Iowa Political Stock Market

How exact are political prediction markets?

The results of various elections of the Iowa Political Stock Market (IPSM) between 1988 and 2000 have been subject of scientific research.

The Value of IPSM-shares on the eve of the President elections only varied by 1.37% other elections showed similar results with only 2.12% and 3.43% difference to the actual election results.

All these results have been closer in 3 of 4 cases as the ones from established research departments.

The results in per cent are based on the MAE (mean average error).

This is meant to be the closest regarding accuracy in surveys and for prediction markets.

The MAE is based on absolute deviation of each variable value from the arithmetic average over all tested values.

Are prediction markets influenced by surveys?

In 1988 the IOWA Electronic Markets studies noticed that the President Market did not follow political surveys. Brüggelambert stated that on one hand prediction markets can not be seen completely separated from surveys and on the other hand prediction markets do not necessarily follow surveys.

Studies from the University of Innsbruck about trade habits showed that less than 25% of the participants based their decisions on surveys.

Generally the trader put more trust into personal estimation, value of the shares and current campaign events. But it also showed that prognosis errors from surveys were reflected into the market.

What we also could see in our discussion forums is that the community was trying to learn from past mistakes to follow the surveys.

How are typical political prediction market constructed?

In most of the cases the principle of "Stimmenanteilsmarktes" is used.

With each (political party) share the user is buying the right of redemption valued at the actual outcome of the percentage for the political party.

In most cases 'continuous double auction market (CDA)', a market design from Forsyth is used.

This market consists of a primary and secondary market and is comparable with the real stock exchange market.

On the primary market users are able to buy and sell share packages (one unit of all available shares) at a fixed price.

On the secondary market users can trade with each other.

Do political preferences of users change the value of the shares in a negative way?

Forsythe states two reasons why a lack of user in relation to their political preferences can create distortion in political prediction markets which can happen.

1. Preferences for political parties can influence the user regarding his objectivity in processing new information.
2. Personal preferences can be overvalued compared to the general opinion of the masses.

The benefit of political prediction markets is that exactly these distortions are guaranteeing a continuous trading which is also benefiting for "marginal traders" which due to their high trading activities and objectivity are the guarantors for the high efficiency of these markets

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