Diversify Voting Influence

PHOTREK

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Square-Root Voting

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Quadratic Voting

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   In this work, the authors present the quadratic voting mechanism and demonstrate how it equates the marginal benefit with the marginal cost of voting. They also explore other possibilities for the cost of voting (power-law cost of voting) and show how to obtain from the model the democratic 1p1v and dictatorship voting schemes.
   key insights: power-law cost, voting schemes, 1p1v vs dictatorship, marginal benefit, marginal cost.

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   This article provides an opinionated narrative summary of the contents and surveys the broader literature related to Quadratic Voting (QV), proposed by one of us (Weyl, 2012; Lalley and Weyl, 2016) building off earlier work by Groves and Ledyard (1977) and Hylland and Zeckhauser (1980), where individuals buy as many votes as they wish by paying the square of the votes they buy using some currency.
   key insights:

9. Vitalik Buterin, Zoë Hitzig and E. Glen Weyl. "Liberal Radicalism: A Flexible Design For Philanthropic Matching Funds", Arxiv preprint, 2020.
In this work, the authors present the details for a flexible design for funding public goods where Citizens make public goods contributions to projects of value to them. The amount received by each project is proportional to the square of the sum of the square roots of contributions received. Under the "standard model" this mechanism yields first best public goods provision. Groups can gain nothing by splitting or combining projects with the same group of participants.
key insights: voting design, square voting mechanism, voting representation.

10. Pasquini R. 2020 Sep 30. Quadratic Funding under Limited Matching Funds: Evidence from Gitcoin. SSRN Electron J. doi:10.2139/SSRN.3702318. https://papers.ssrn.com/abstract=3702318.
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13. Eric A. Posner, E. Glenn Weyl. 2018. Radical Markets: Uprooting Capitalism and Democracy for a Just Society. Princeton, NJ: Princeton University Press. https://press.princeton.edu/books/hardcover/9780691177502/radical-markets.
A quite original book proposing several radical adjustments to private and public markets. Private property is proposed to be an open auction in which owners are required to state a public assessment for which they are willing to sell and to pay a tax. Public decisions are determined by purchasing votes based on the Quadratic Voting method. Immigration is managed via private citizens sponsoring immigrants. Mutual Funds and related trusts are restricted to either not owning competitors in the same field or a maximum percentage of ownership of a single company. People are own and are paid for the data they supply to a process.

14. André L. M. Vilela and H. Eugene Stanley. "Effect of Strong Opinions on the Dynamics of the Majority-Vote Model", Scientific Reports, Nature, 2018.
In this work, we investigate how the presence of individuals with strong voting opinions affects a network of social interactions based on the majority-vote model. We find that such a weighted voting mechanism weakens the consensus of the network, imposing a fragile social-ordered regime, where opposing voting states dominate.
key insights: voting interactions, weighted voting, consensus robustness.

15. André L. M. Vilela; Chao Wang; Kenric P. Nelson; H. Eugene Stanley. "Majority-vote model for financial markets", Physica A - Statistical Mechanics and its Applications, Elsevier, 2018.
In this work, we propose a heterogeneous agent-based two-state sociophysics model to simulate the opinion dynamics of financial markets. Focusing on stock market trader dynamics, we propose a model with two kinds of individuals in which local and global interactions govern the dynamics of buying and selling investors. Despite its simplicity, our model presents such stylized facts of real financial markets and provides us insights regarding the voting dynamics influence on the stock market prices.
key insights: voting interactions, voting strategies, market opinion dynamics.

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Provides valuable insights about the shortcomings and difficulties of theoretical analysis of voting. Distinguishes between egalitarian and utilitarian balances of influence. Nevertheless, also derives square-root voting as a weighting mechanism for several important cases.