

**Discussion of**  
Advertising Arbitrage  
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- ▶ **This paper:** A theory of why arbitrageurs do advertise their arbitrage opportunities
  - ▶ Mechanism: revealing information makes arbitrage profitable through price convergence
- ▶ No previous theoretical research on this topic
  - ▶ Some relation to work on information disclosure/information acquisition (different emphasis)

# Outline of discussion

1. Describe environment
2. Revisit results
  - ▶ Highlight critical assumptions
  - ▶ Comments
3. Conclusion

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- ▶ Borrowing and short sales constraints  $\Rightarrow |y_i|$  bounded (**key**)

## Solving the model: advertising frontier

- ▶ Combine advertising technology with advertising constraint  $\Rightarrow$  "advertising frontier"



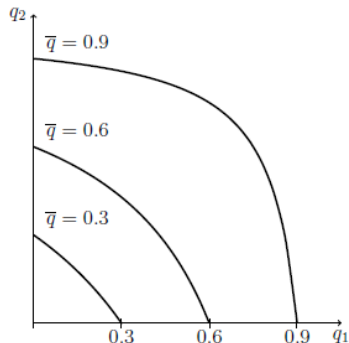
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Figure 2: The arbitrageur's advertising possibility frontier.

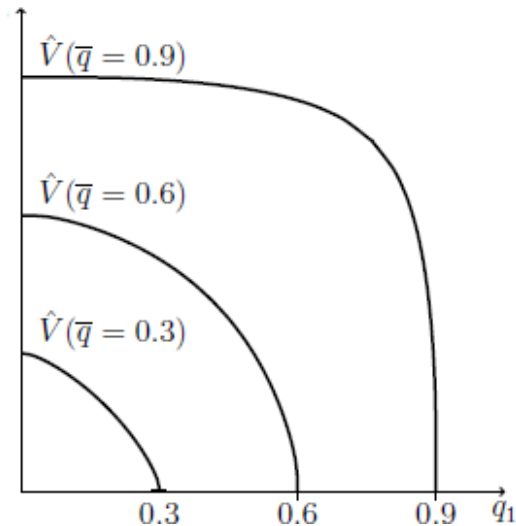


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- ▶ Choose portfolios optimally  $\Rightarrow$  focus on optimal  $q_1, q_2$
- ▶ Indifference curves  $\Rightarrow$  **Main Insight**
  - ▶ *Complementarity* between portfolio choices and advertising



## Results basic model

### 1. Arbitrageurs concentrate advertising in a single asset

- ▶ How robust is this result?
  - ▶ True for risk averse arbitrageurs with linear advertising frontier
  - ▶ True for CARA arbitrageurs with CARA technology
- ▶ **Conjecture:** *concentration result holds when*

risk aversion  $\times$  quantity of risk  $\times$  curvature of advertising technology

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  3. More a) advertisable, b) mispriced and c) "prone to converge" assets are advertised by a risk neutral arbitrageur
    - ▶ Risk neutral limit makes results look somewhat trivial: arbitrageurs only choose to invest in one asset, hence they only advertise that asset

## More comments

1. Shouldn't arbitrageurs share information *only* with lenders/ counterparties instead of with the public?
  - ▶ More profitable for lenders and arbitrageurs
  - ▶ Constraints on trading are crucial  $\Rightarrow$  Deeper theory needed?



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2. Prediction of the model: short vs. long positions
  - ▶ Fact: we only see advertising for short positions, not for long positions  $\Rightarrow$  But the model is *symmetric* (counterfactual)
  - ▶ Endogenous prediction of the model if short-sale constraints are more binding than borrowing constraints (**interesting insight**)

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3. Persistent versus one-time arbitrage opportunities
  - ▶ Should affect the results

# Extensions

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## 2. Reputation

- ▶ Partially addresses possible concerns about lying
  - ▶ Weakens results  $\Rightarrow$  Advertising only occurs in some equilibria.
- ▶ Importance of horizon of arbitrageurs for predictions

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- ▶ Some extra work could be done sharpening required assumptions
  - ▶ In *theory*. Example: necessary and sufficient conditions for non-convexities/strong complementarities
  - ▶ In *practice*. Example: which actual markets/situations verify those conditions