

Discussion of
“Crowdsourcing Peer Information
to Change Spending Behavior”

D'Acunto, Rossi, and Weber

David Hirshleifer

Discussant

AI & BIG DATA IN FINANCE RESEARCH FORUM

Webinar

December 2022

A helicopter view

- Extremely impressive empirical analysis
 - Careful methodologies, robustness checks
 - Thoughtful interpretation
 - Thorough consideration of alternative explanations
- This discussion
 - Conceptual issues

What does the paper teach us more broadly?

A possible hint:

- As authors discuss, many people do not seem to save enough to maintain consumption levels in retirement.
- Findings here:
 - Social information, provided via a disclosure (not social interactions) affects spending choices
- Suggests more generally that social information may be important for consumption/saving decisions
- So going further:
 - Maybe (observation of others is an important source of the undersaving problem
 - Maybe observation of others, or updating from it, is biased
- Is overconsumption a **social finance** problem?

What does paper teach us about competing theories?

- Lots of theories of possible overconsumption
- Behavioral theories:
 - Present bias (hyperbolic discounting)
 - Laibson (1997)
 - Wealth signaling (Veblen effects)
 - Cole, Mailath & Postlewaite (1995); Bagwell & Bernheim (1996); Corneo & Jeanne (1997); Charles, Hurst & Roussanov (2009)
 - Preference interactions (Keeping up with the Joneses preferences)
 - Abel (1990), Campbell & Cochrane (1999), Dupor & Liu (2003)
 - Speculative disagreement
 - Brunnermeier et al. (2014), Heyerdahl-Larsen & Walden (2022)
 - Visibility bias /social observation theory
 - Han, Hirshleifer & Walden (2022)

What does paper teach us about competing theories?

- What lessons do the authors draw? Abstract:
- **“we isolate and quantify the information channel of peer effects in a ... setting that... rules out a role for common shocks across peers or peer pressure and in which connections among peers are not formed endogenously.”**
 - Pinning down the information channel is an important contribution
- Per competing theories:
 - Each theory is a “channel”
 - Evidence for information channel
 - No comment about other channels
- Reasonable, appropriate
 - A test of one channel does not rule out all other channels

What does paper teach us about competing theories?

- However, a key value-added of a well-identified test:
 - Insight about importance/validity of competing theories
- Findings are:
 - A victory for some information-based theories, a defeat for others
 - Some information-based theories fit the results, some do not
 - At least a small defeat for non-informational theories
 - Several non-informational theories predict zero effect for this experiment

So:

- What do different theories predict about effects on consumption of disclosure of expenditures of others?

Present bias theory (hyperbolic discounting)

Prediction:

- Disclosure of information about expenditures of others has **no effect** on consumption.

The theory (in pure form):

- Preference-based
 - Asocial, not based on information transmission
- Consumption not driven by learning from others
- People overconsume because they are tempted to do so
 - Self-control
- In pure form, model deterministic
 - Already know expenditures of others before disclosure
- Could add uncertainty about preferences (and therefore expenditures) of others
 - But, disclosure still have no effect
 - Consumption decision asocial

Preference interactions (Keeping up with the Jones' preferences)

Prediction: Dupor & Liu (2003)

- Disclosure of information about expenditures of others has **no effect** on consumption

The theory (in pure form):

- Preference-based
 - Social preferences
- People consume in coordination with consumption of others
 - In general could be either over- or under- consumption
- Consumption not driven by learning from others
- Model deterministic (in pure form)
 - Already know expenditures of others before disclosure
- Could add an unknown state variable
 - No obvious reason why disclosure would cause an asymmetric effect on overspenders vs. underspenders

A straightforward rational information channel

Predictions (conjectural):

- Disclosure of information about expenditures causes agents to shift their consumption toward the disclosed consumption of peers.
- Effect stronger for more informative disclosures.
- **Symmetric** effect on the consumption of overspenders, underspenders

Rational information channel theory **rejected**

The theory:

- Unknown state variable x
 - Need to save, same for all agents
 - $P(\text{layoff})$, $P(\text{health problem})$
- Each agent has a conditionally i.i.d. noisy signal about x
- Normal distributions
- If disclosed, agents also learn from expenditures of others
 - Additional time period, or compress decisions to a single date and find a fixed point
- Underspenders, overspenders move symmetrically toward average belief/consumption rate in population

Wealth signaling (Veblen effects)

Prediction:

- Disclosure of information about expenditures of others has **no effect** on consumption.

The theory (in pure form):

- Information-based theory (“channel” ?)
- People want to be perceived to be wealthy.
- People learn by observing consumption of others about wealth of others.
- People do not learn from others any useful information about how much they should consume.
- People already know distribution of wealth in the economy
 - A disclosure of others’ consumption does not change the decision of how much to consume
- An extended setting
 - People learn from disclosure about distribution of wealth in the economy
 - Could shift the parameters of the signaling equilibrium
 - Still no obvious reason to expect bigger effect if disclosure on overspenders than on underspenders

Speculative disagreement theory

Prediction:

- Disclosure of information about expenditures of others has **no effect** on consumption

The theory: (Heyerdahl-Larsen & Walden 2022)

- People with strong priors disagree about future outcomes
- Bet against each other in asset market, think they will get rich
- So depending on a wealth effect, may overconsume today
- Disclosure of expenditures of others does not change anyone's mind (strong priors)
 - “For simplicity, we assume that agents do not update their beliefs over time.”
- Could weaken assumption, so that disclosure causes updating
 - But no obvious reason for the asymmetric updating of expenditures in the data

Visibility bias social observation theory

Predictions: (some cases of model)

- Disclosure of information about expenditures of others causes them to shift consumption toward peers.
- Effect stronger for more informative disclosures.
- Asymmetric effect:
 - Overspenders decrease consumption by more than underspenders increase consumption.

Visibility bias social observation theory

The theory:

- Unknown state variable x
 - Need to save
 - Agents have conditionally i.i.d. private signals about x
 - Observe small sample of others' consumptions
 - Visibility bias
 - Consumption activities generate publicly visible cues
 - Greater attention to **what is seen** than **what is unseen**
 - Boat parked in neighbor's driveway
 - Neglect of selection bias
- Update toward thinking others consuming heavily
- Think x is low
- Overconsume

Effects of disclosure in the visibility bias model: An example

- ‘Smart’ agents know true x almost perfectly
 - Extensive private information
 - Consume almost optimally (full-information)
- Biased agents update optimistically about x (visibility bias), overconsume
 - Don’t realize others are less optimistic
- **Salient disclosure** of average consumption of others
 - Smart agents (underspenders) update only slightly optimistically
 - Biased agents (overspenders) become substantially less optimistic
 - Asymmetric effect on spending reduces per capita consumption
- Notes:
 - Such asymmetric effects can also occur in versions of the model without smart agents
 - E.g., social network effects

Summary

- Important findings
- Show that social information (though not necessarily social interactions) are important for consumption choices
- Strong contribution to growing field of social finance
- Suggest that biased beliefs may be a source of overconsumption
- Suggest that social observation may play an important role
- Results have implications for competing theories of overconsumption