Information Frictions in Macroeconomics and Finance

A lunch talk by Laura Veldkamp
Information Frictions Research: Past, Present and Future

- What has been accomplished so far?
  - Single-agent models
  - Settings with complementarity
  - Settings with substitutability

- The challenges and open questions we face

- Big questions to tackle in the future
Often, the role of the information friction is to create inertia or “stickiness” in actions. 
*e.g.,* Sims (1998, 2003), Abel, Eberly and Panageas (2009)

Allocating attention across many risks can also reconcile cross-sectional differences 
*e.g.* Peng (2005), Peng & Xiong (2006)

Learning can explain dynamics and comovements 
*e.g.* David and Veronesi (2009), Bansal and Shaliastovich (‘09), Dreschler (2009), Van Nieuwerburgh & Veldkamp (2006)
Models with Complementarities

- Do what others do. Ex: price-setting, speculative buying/selling, bank runs.

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  - Refinement $\rightarrow$ unique equilibria

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  - Inertia: Higher-order beliefs are slow to move. (Insensitivity to private signals)

Woodford (2002, `08), Reis (2006), Mackowiak and Wiederholt (2010), Lorenzoni (2009),
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  - **Volatility: From over-weighting public signals** (prices)

Models with Substitutability

- Do what others don’t. Ex: Asset markets, goods markets.

- In this setting, information frictions
  - Generate realistic business cycles.
  - Information diffusion slows the effects of fundamental changes on prices and choices.
The Deluge of Information

“What, exactly, is the internet? Basically it is a global network exchanging digitized data in such a way that any computer, anywhere, that is equipped with a device called a 'modem', can make a noise like a duck choking on a kazoo.”

Dave Barry
We can know almost anything in this day and age. Are information frictions models outdated?

Perhaps we should replace our models of asymmetric access to information with models of information trade-offs.
What do agents really know?

- Do investors know more than firms, or v-ersa?
- Do central bankers know more than firms?
- Do prices aggregate information? Why not?

- Where does our information come from?

“If you hold a cat by the tail, you learn things you cannot learn any other way.”

Mark Twain (1835–1910)
What do agents really know?

- Important question because many results are very sensitive to the information structure.

- How do we justify an information structure? Begin by asking where information comes from:
  - Others we meet (diffusion, social networks)
  - Prices
  - We choose to acquire it.
Information Choice

- With complementarity – Acquire public information. Collapses info heterogeneity.
  *Hellwig & Veldkamp (2009)*

- With substitutability – Acquire information others do not have. Small (or no) initial differences -> highly dispersed actions.

- With information markets – economies of scale create complementarities. -> correlated actions.
  *Veldkamp (2006), Veldkamp & Wolfers (2007)*
The Road Ahead
How to measure information theoretically?

- **Rational inattention**
  
  *Sims ‘03*

- **Additive precision**
  
  *Wilson ‘75, Kacperczyk, Van Nieuwerburgh & Veldkamp ‘10*

- **Fixed costs**
  
  *Gabaix & Laibson ‘02, Reis ‘06, Abel, Eberly & Panageas ‘09*

- Which measure to use in which context?
- Are some things easier to learn than others?
How to measure information empirically?

- Exogenous information events
- Count news stories/analyst reports
- Do actions or prices forecast fundamentals?
- Forecast errors
- Disagreement
An Information Economy

- Our economy is becoming less dependent on goods production and more dependent on knowledge production.

- This is not just technological innovation. For example, what do rating agencies do?
  - Information collection, synthesis and distribution.
  - Even in non-information industries, managers aggregate information to make decisions.

- If this determines GDP or institutional investment, we need aggregate models that include these kinds of activities.
The Financial Crisis: An opportune moment to advance this field

- No one knew what risks assets represented. No one knew who held what. When all counter-parties were suspect, trading ceased.

- Problems with rating agencies and banks are partly a failure to process relevant information.

- New applications for our ideas and tools will attract new interest to the field.
Coming Soon to a bookstore near you:

Information Choice in Macroeconomics and Finance

by Laura Veldkamp
Princeton University Press