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Discussion:

How market ecology, leverage and network dynamics explain market malfunction

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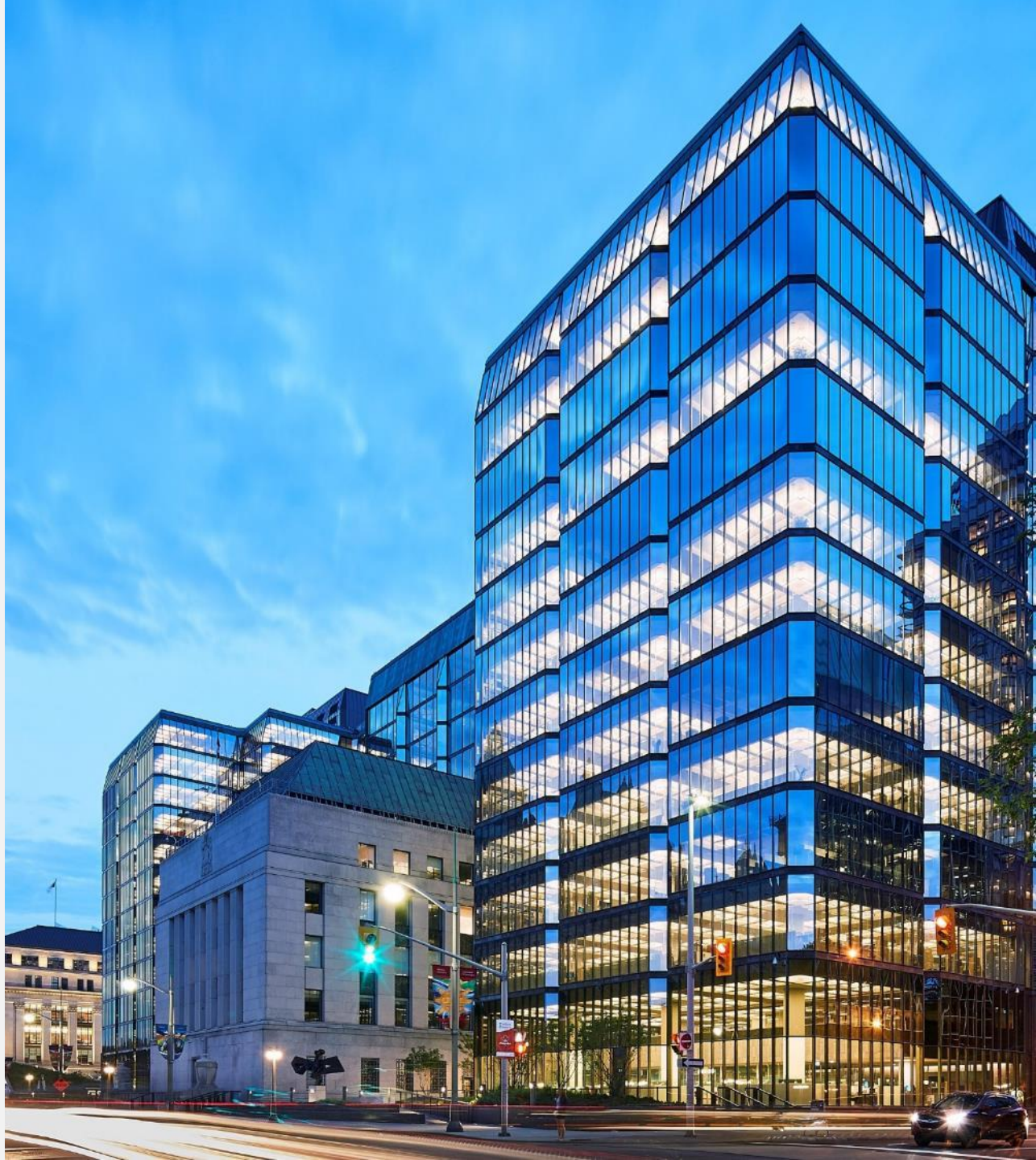

Interesting and thought provoking

- Broad and thoughtful presentation that spans several papers
- Several insights resonate
  - Allocation of funds across trading strategies may impact market dynamics
    - Allocation of funds across “strategies” can be gradual
  - Risk management (regulation or internal practice) that sets leverage targets can see “assets sales” that depress prices below fundamentals
  - Stress tests may miss amplifying factors

- Agent Based simulation models can be part of research (policy) toolkit
  - Computationally tractable compared to forward looking decision based models

Comments

- "Efficient markets" seems to be a bit of a "straw person"
  - Does market ecology narrative deliver 1987, 2010 flash crash
  - Can we use ABM to help identify key "frictions"?

- Is "nature" a good way of thinking of "social systems"
  - People are forward looking in way that "nature" is not
    - Important for policy since decision rules can change
  - Ecology view may limit how we anticipate implications of changes in environment (e.g., cheaper computers) for behaviour (financial innovation) and where risk shifts.
- Agent based **decision** models needed to identify limits of ABM

Ecology as a model for market malfunction

- "Ecology" approach with 3 exogenous trading strategies
  - Selection pressures (profits) drive shifts in wealth across strategies

- Intuitive and tractable model that can deliver
  - Slow convergence over time towards "fundamental" price
  - Volatility of market prices

- Question: if mispricing is predictable, what stops entry of new strategy(ies)?
  - Cost of developing/operating new strategy large relative to profits?
  - Is price a sufficient statistic for "optimal" strategy?
  - Or should "optimal" strategy condition of wealth of other players?

- ABM seems like it could help us identify plausible answers
  - Calibrate to economy "as is" and then estimate "profit" of entrant

Is "Nature" a good analogy for "Social"?

- Market ecology offers interesting insights into selection & dynamics
  - Mathematical tools that economics should shamelessly borrow

- But is it a good analytical framework for social science?
- Key difference between "natural" systems and social systems
  - People are (at least partially) forward looking
  - Example: Climate change vs frog in water being gradually heated

- Many of the big questions for policy makers revolve around
  - How will agents respond when we change our policies
  - What will changing environmental forces imply for future risks

- Here we need range of model laboratories – not just "as it is" today

"…economics can be done without assuming equilibrium"

- In one sense, this is neither new nor controversial
  - Long tradition of various forms of partial equilibrium or agent decision model
  - A number of "equilibrium concepts"

- The author means something different
  - Economics without **decision problems**

- I think this is potentially a misleading approach for Economics
  - ABM can be useful tool – and should be part of our toolkit
  - But identifying limitations of ABM requires recognizing that people make choices
  - Market ecology example highlights importance of understanding general equilibrium
    - Narrative around "portfolio insurance" and 1987 crash – every buyer needs a seller

Conclusion

- Interesting and thought provoking research agenda
  - Work is worth reading and reflecting upon
- ABM/market ecology approach can offer interesting insights
- Complementary research agenda/tool
- Not a substitute for decision based models