“Aggregate Information Dynamics”

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Key questions:

Time periods: growth, recession with or without crisis

Investigate measures of *fragility* and ***information*** at different times (before and in recession with crisis vs. other)

Can these indicators predict recession with crisis?

Does information lead to reallocation of capital?

Are there information spillovers across countries?

Some results:

More information is produced before and during recessions with crises than otherwise

This leads reallocation of capital, narrowing dispersion of firms' q-ratios, spillovers across borders

Information measure and median volatility have predictive power over recession with crisis (but not without)

Empirical measure of information – **standard deviation of volatilities of individual stocks**

Theories of information: 1

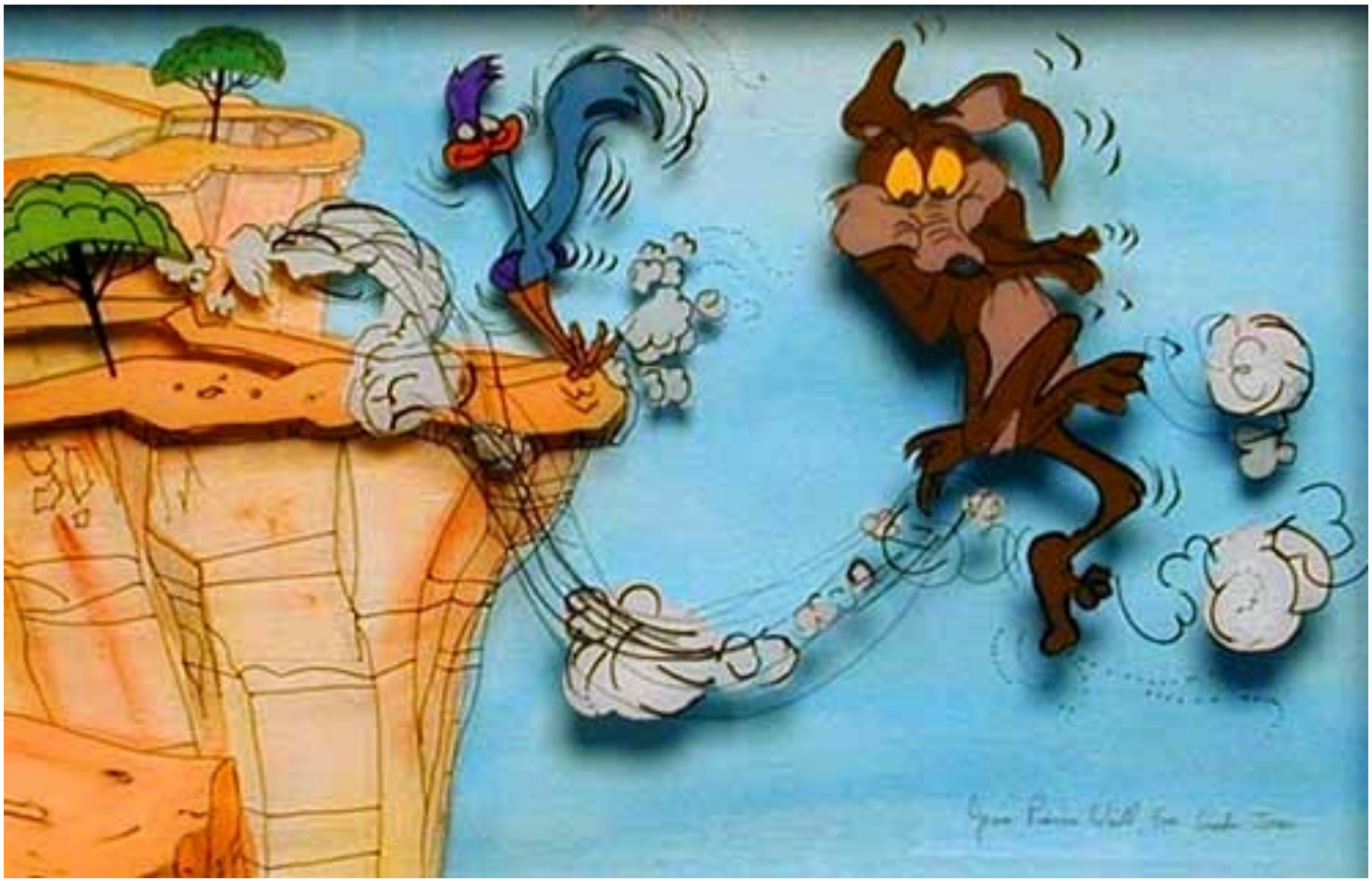
- Grossman and Stiglitz (1980) "Impossibility of Informationally Efficient Markets"
  - Sophisticated investors collect information and trade on it
  - but prices incorporate information only partially (otherwise no incentives to collect information)
- Xiong (2001)
  - This process depends on arbitrageurs' capital
  - When capital is depleted (after losses, in crises), less information gets into prices
  - Moreover, trades can be destabilizing (creating volatility linked not to fundamentals but to depleted capital)

… suggests *high* volatility, but *less* information in crises

Theory 2: Bubbles and Crashes

- Abreu and Brunnermeier (2003) "Bubbles and Crashes"
  - Boom becomes a bubble at some point, sophisticated traders become sequentially aware of the bubble
  - Decide when to attack: bubble crashes when critical mass attacks
  - Result: traders do not attack right away, but ride bubble for some time
  - Eventually bubble crashes (high volatility, information is revealed and becomes common knowledge)
- Consistent with Gorton and Ordoñes (2016), "good booms" and "bad booms"
- Chuck Prince "Dance as long as the music is playing"

Minsky moment – Wile E. Coyote Effect



Theory 3: Crisis Mechanism

- Brunnermeier and Sannikov (2014)
  - Financial institutions choose leverage endogenously => resilience to normal shocks, but large shocks (losses) leading to firesales and crisis episodes

  Equilibrium characterized by
  - rise in leverage prior to crisis
  - rise in volatility prior to and in crisis, capital reallocation
  - volatility is due to financial frictions
  - all these phenomena occur without information production

A closer look at analysis

- Can we distinguish among these and other theories?

A closer look at analysis

- Measure of **fragility**: median Vol_i, Atkeson et al (2013)
  - Really median $1/Vol_i$ = 1 / median Vol_i
- Measure of **information**: St Dev (Vol_i)
  - Turns out to have 96% correlation with standard deviation of returns

- Basically, moments of the distribution of firms' volatilities
  - both go up before and in recession with crisis, predict these events

Is this about information?

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- Alternative forces:

(1) Leverage – yes, both measures would rise in leverage

(2) Endogenous volatility (due to financial frictions and changing risk premia) – yes again

Can one disentangle these effects?

- Some thoughts
  - I am sure authors have much better ideas then these naïve theorist's suggestions
- Leverage – could estimate asset volatility rather than stock volatility, perhaps control for leverage more carefully
- Even controlling for leverage, endogenous risk would amplify volatility (& raise standard deviation of volatilities)
- Endogenous risk – could isolate idiosyncratic component of asset volatility, i.e. subtract portion of return predictable by common risk factors

Conclusions

- Thought-provoking paper
- Important empirical results – distribution of volatilities in crises, asset reallocation, global spillovers
- Suggests important implications on information, but may be consistent with other theories
- It would be nice to disentangle those effects

Thank you!