Economic Narratives
How Bimetallism and Bitcoin Went Viral
Lecture 1: Basics of Narrative Economics

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Acknowledgements and Plans

• This lecture derives in part from my 2017 American Economic Association Presidential Address “Narrative Economics”


• Planning to develop the ideas into a new book
Outline of Lectures

Lecture 1: Basics of Narrative Economics

• What are narratives?
• Narratives smaller role in economics and finance than in other sciences
• Narratives as vectors of change in low-brow economic thinking that leads to action
• The Kermack-McKendrick SIR epidemic model, 1927
• Example of an economic narrative: Bimetallism 1890s
• An analogous narrative: Bitcoin 2010s
• Other examples
Outline of Lectures, continued

Lecture 2 tomorrow: Applying Narrative Economic Theory

• Establishing Direction of Causality
• Contagion and recovery parameters and size and duration of epidemic
• Studying Recurrent Economic Narratives
  • Economic effects of bimetallism and bitcoin narratives
  • Narratives about others’ animal spirits and decency
• The Future
  • The coming world with vastly accelerated communications
  • How economic models can be advanced to take account of economic narratives
What Is Narrative Economics?

• At present, narrative economics is mostly a research proposal, extending new trends and technology in research

• Spread of narratives follows laws of mathematical epidemiology

• Modern digitized textual data and its analysis offer hope to quantify and understand economic dynamics better
What Is a Narrative?

- A narrative is a *telling of* a story, attaching significance to it with implied emotions, morals, lessons, or sense of personal identity
- Usually human interest implied if not directly mentioned in it
- Homo narrans (Fisher 1984) or Homo narrator (Gould 1994) or Homo narrativus (Ferrand and Weil 2001)
- Narratives tend to be tied to music: Homo musicus (Kirnarskaya 2009)
- Narrativity built into human brain. Dreams take form of narratives
Wilder Penfield’s Classic Experiment Inserting Electrodes in Human Brain under Local Anesthesia, 1958

“A young woman (N. C.) said, when her left temporal lobe was stimulated anteriorly, at point 19 in Figure 5, “I had a dream, I had a book under my arm. I was talking to a man. The man was trying to reassure me not to worry about the book.” At a point 1 cm. distant, stimulation at point 20 caused her to say: “Mother is talking to me.” Fifteen minutes later the same point was stimulated: The patient laughed aloud while the electrode was in place. After the withdrawal of the electrode, she was asked to explain. “Well, she said, “it is kind of a long story but I will tell you. . . .”
JSTOR Counts of Word “Narrative” as Percent of All Articles, by Discipline
Revolutions in Economics, Partly Data-Driven, Partly Narrative-Driven, Google Ngrams
Bimetallism Ngram Counts 1800-2008
Bimetallism in Proquest News & Newspapers

- Epidemic begins 1892, peaks 1896
Colorful Narratives around Bimetallism

• *Coin’s Financial School* published 1894

• William Jennings Bryan “you shall not crucify mankind upon a cross of gold” 1896
The Wizard of Oz Parable

• *The Wonderful Wizard of Oz* L. Frank Baum Novel 1900

• Hit 1902-3 Musical starring Anna Laughlin as Dorothy
The Bimetallism Recurrent Narrative Keeps Popping Up, Almost Unrecognizable Today

- *The Wizard of Oz* motion picture 1940 starring Judy Garland as Dorothy
- Wicked: The Untold Story of Witches of Oz Touring since 2003
Market Value of Bitcoin 2009-2018 in USD

The total USD value of bitcoin supply in circulation, as calculated by the daily average market price across major exchanges.

Source: blockchain.com
Google Trends Bitcoin (Launched 2008) and E-Krona (Launched 2016) (worldwide search)
U.S. Unemployment Rate 1890-Sept 2017
U.S. Stock Prices and Earnings Per Share, Inflation Corrected 1871-2018
Real U.S. Home Prices, Building Costs, Population and Interest Rates since 1890
Kermack-McKendrick SIR Disease Epidemic Model 1927

- $S=$ fraction of population susceptible, $I=$ fraction of population infected and now contagious, $R=$ fraction of population recovered and now immune, $S+I+R=1$, $c=$ contagion rate, $r=$ infection rate rate

$$\frac{dS}{dt} = -cSI$$

$$\frac{dI}{dt} = cSI - rI$$

$$\frac{dR}{dt} = rI$$
Time Paths of $S$, $I$, and $R$ in Kermack-McKendrick Model

$I(0) = \frac{1}{1000000}$, $c=0.5$, $r=0.05$
Figure 1. Ebola Epidemic, Number of Newly-Reported Cases in Lofa County, Liberia June-November 2014, Source: Center for Disease Control
Constellations of Economic Narratives

• Contagion rate of a narrative is related to the presence of other narratives
• Narratives about “bimetallism” and William Jennings Bryan and labor unrest were “all that people wanted to talk about” in US in mid 1890s
• Narratives about Donald J. Trump and his Tweets and rallies are “all that people want to talk about” in US now
• “co-epidemic” compartmental models represent this (as with models relating HIV and TB epidemics), such models may be more important in economics than in medicine.
Contagion Rate of Narratives Can Be Affected by the Silliest of Story Components

• What makes for a colorful story that really spreads? No one knows for sure
• The difference between epidemic and no epidemic may depend on slight differences in $c$ (or $r$)
• A simple play on words or joke, or association with a celebrity, may increase $c$
• Some change in the environment that creates a continual reminder of the story may lower $r$
Contagion Rate May Depend on Perceptions of Others’ Perceptions: Keynes Beauty Contest and the Stock Market

• Keynes 1936: “... professional investment may be likened to those newspaper competitions in which the competitors have to pick out the six prettiest faces from a hundred photographs, the prize being awarded to the competitor whose choice most nearly corresponds to the average preferences of the competitors as a whole. . .”

• Almost a trillion possible lists of six

• Optimal strategy?

• Absence of research on how people actually deal with such strategy in speculative markets
People Surmise What Others Are Thinking by Watching or Reading News that Other People Read (Examples from October 19, 1987 Crash)

- October 12, 1987 WSJ:
  - Could “put the market into a tailspin.”
  - Portfolio insurance could start a “huge slide in stock prices that feeds on itself”

- October 17, 1987: NYTimes
  - Portfolio insurance could push “slides into scary falls.”
Market watchers have been fascinated for some time by a striking similarity between stocks’ surge this decade and their path 58 years ago. Some academics, such as Lester Thurow and John Kenneth Galbraith, have voiced concern that the U.S. may currently be repeating its unsustainable boom of the 1920s. Wall Street analysts find the comparisons intriguing. But they argue that much has changed in the intervening decades to make the stock market—and the economy—more stable.
Recovery Rate $r$, Complacency and Fear Extinction

- Scholar.google.com gives 15,900 hits on “fear extinction”
- Emotion of fear is difficult to control rationally
- There is an inborn mechanism to erase fear after an interval
- If recovery is disordered can produce phobias or post traumatic stress disorder (PTSD)
- What would happen if a rat came running into this room? Are you really in control of your emotions?
Google Ngrams (Books) Counts for Some Major Macroeconomic Models 1940-2008
Google Ngrams Search for Famous Economists 1800-2008
Google Ngrams: Albert Einstein 1878-1955 vs. Erwin Schrödinger 1887-1961
Google Ngrams for Karl Marx (1818-1883) and Zeus
“Great Depression” Counts as Percent of Database each Year
Emotional Content of Popular Stories Today May Have Impact on Decisions to Buy or Sell

- Robots replacing jobs
- North Korea
- Hurricanes
- Wildfires
- Immigrants
- Nationalism

Salience of these factors and impressions of the impact of the stories on other investors change day to day with incoming stories.