Narrative Economics and COVID-19

PRINCETON UNIVERSITY

BCF

Webinar with Markus

Robert Shiller
Yale

Introductory remarks by

Markus Brunnermeier
Princeton

PAST AND FUTURE SPEAKERS

- Last

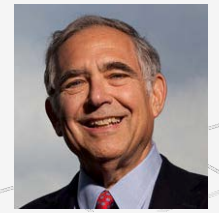
Mike Spence
"Tracking the Global Pandemic Economy"

- Today

Bob Shiller
"Narrative Economics and COVID"

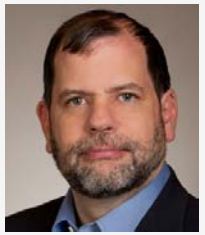
- Next webinars

Armino Fraga
"Brazil's Perfect Storm"



Richard Zeckhauser
"Climate Policy: Moving Beyond Ostriches and Pollyannas"

- Related:

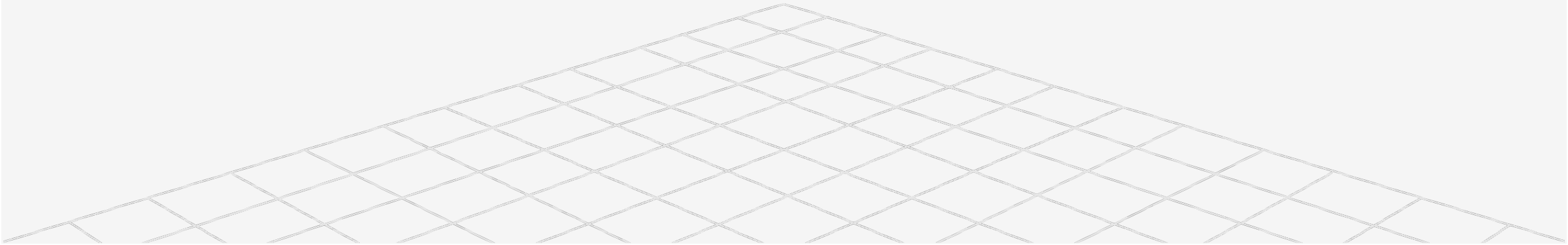


Tyler Cowen

WHAT'S A NARRATIVE?

- Simplified consistent story
  - connected events

- Persuasion is often an exchange of narratives/stories



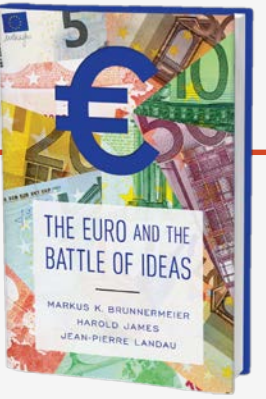
SIMPLE STORIES IN AN INCREASINGLY COMPLEX ENVIRONMENT

- The power of **simple** stories/models
  - Models are simplified pictures of reality
    - Irrationality of people "living in models" appear stretched, but …
  - Rational paradigm to behavioral/psychological paradigm in economics
- External vs. Internal consistency of models/stories
  - Internal: fully rational … but compromise how well model reflects reality
  - External: make short-cuts in solving model, but match complex model
- World is getting increasingly complex
  - How to measure complexity?
    - Layers of reasoning/thinking
    - Brunnermeier-Oehmke (2009), Arora et al.
- The more complex the world, the bigger the trade-off:
  Avoid oversimplification vs. inclusion

STORIES AND THE PUBLIC SPHERE

- Public exchange of ideas – public sphere (Jürgen Habermas)
  - Starting early 1800s in coffee houses, clubs, journals
  - Crucial for open society and democracy
- Divided public spheres: Echo chambers
  - Cognitive dissonance
  - “Group think”
- COVID conspiracy theories and hoax stories
- The role of a common language
  - Divides public debate along national boundaries

BATTLE OF IDEAS IN ECONOMICS



- Different economic philosophy

"Rhine-divide"

- Role of common language: Intellectual debate is via international media
  - The Economist, FT, …
- Interests/incentives are interpreted throw the lens of ideas

GLOBAL SOCIAL MEDIA? (SHARING NARRATIVES/STORIES)

- From national to digital boundaries:
  Divide countries/language areas in new "**digital areas**/bubbles"
  - Age groups, sociological groups, …
  - "Digital currency areas" along online platforms

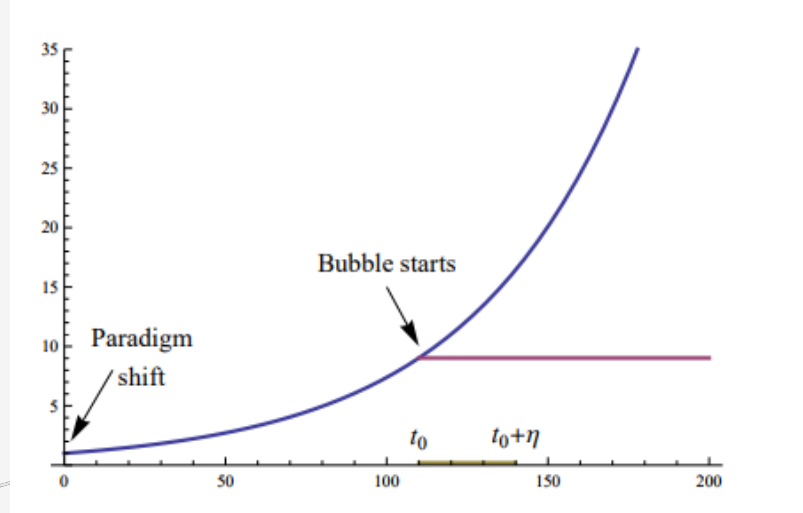
- How to regulate global social media?
  - Law is national vs.
    public sphere is within digital/virtual boundaries
  - Fight for control/power of social media companies

- Key: **Inclusive** public sphere across "digital areas"
  virtual territories/bubbles"
  - To share narrative/stories
  - Bridges: role of public intellectual (and popular science)

NARRATIVES AND (ASSET) BUBBLES

- How a narrative spreads/persuades?
  - across groups
  - Measure: Asset bubbles "when the liftboy buys shares"

- "Irrational exuberance", extrapolative expectations/beliefs
- Rational riding bubbles
  (on others' extrapolative expectations)



Abreu
Brunnermeier (2003)

POLL QUESTION

1. The persuasive power of stories/narratives is typically
   a. Underestimated
   b. Correctly evaluated
   c. Overestimated

2. Global society is split across
   a. Not national boundaries but “digital communities”
   b. National forces are still more powerful
   c. Class forces are still very powerful

3. Narratives economics in economics
   1. Can be understood within a rational economic paradigm
   2. Necessitates behavioral/psychological elements

Narrative Economics and Covid-19

Robert J. Shiller
Sterling Professor of Economics, Yale University

Princeton BCF Webinar Series

Date: Friday, July 10, 2020
Time: 12:30 p.m. ET

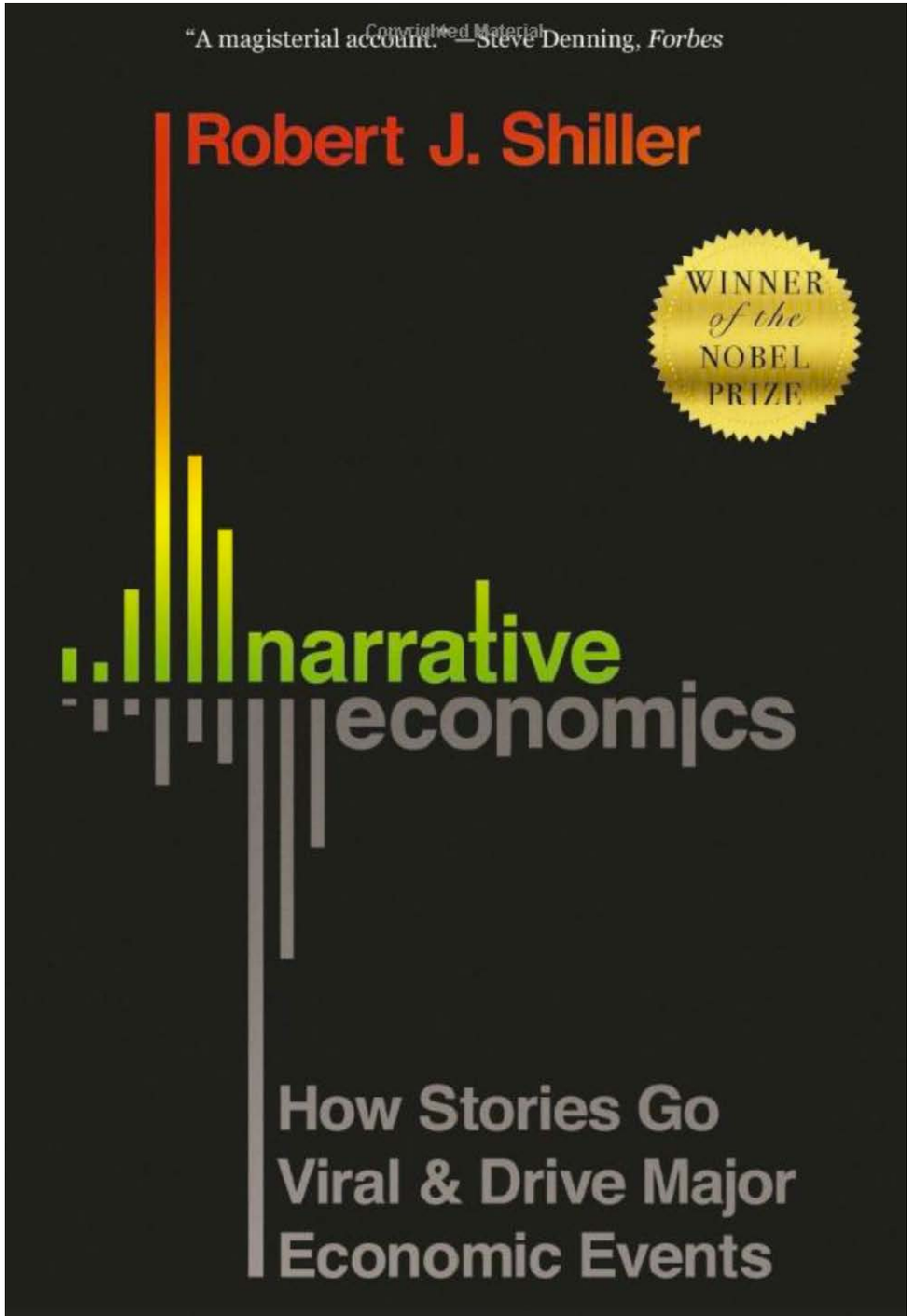
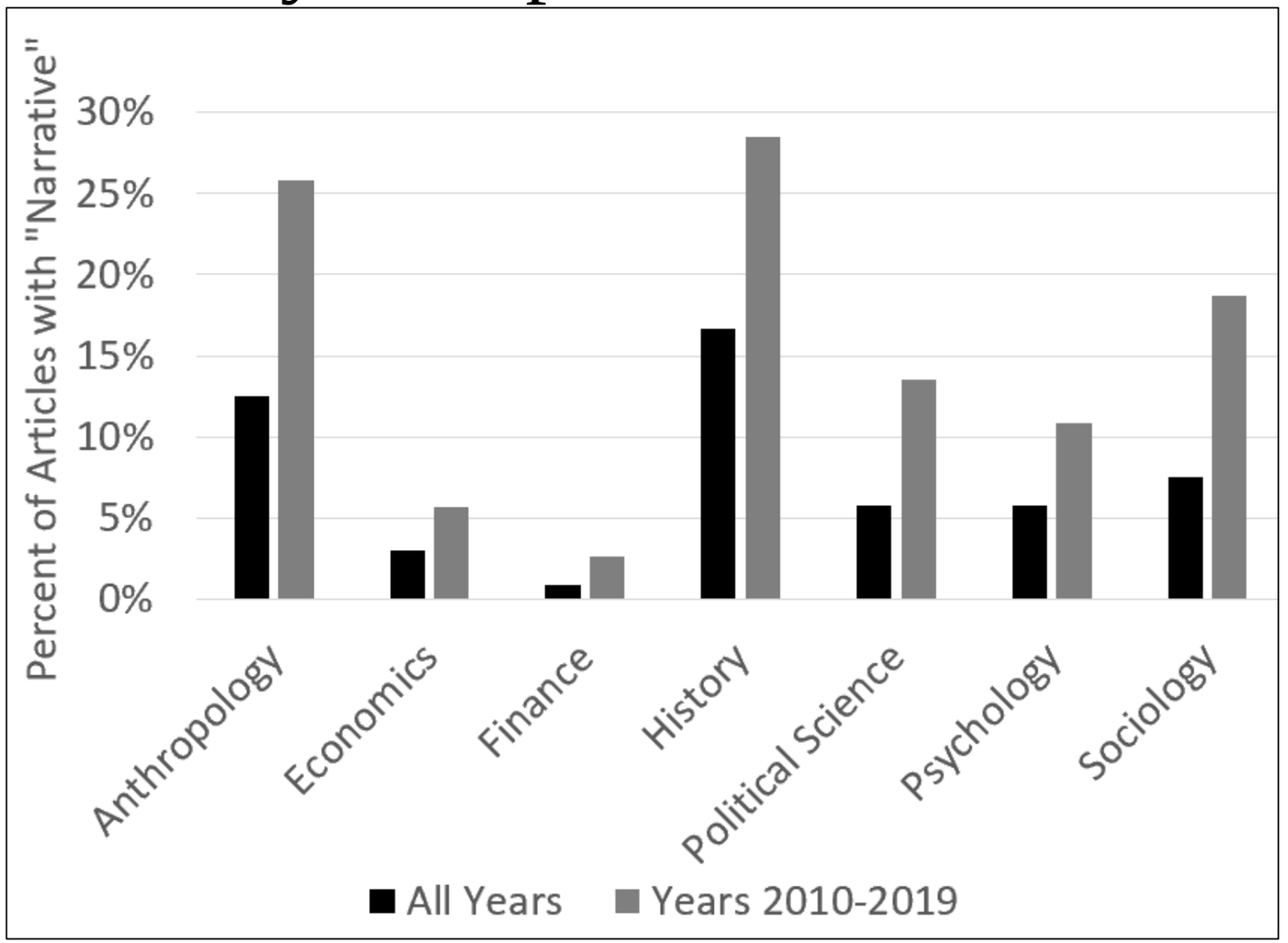
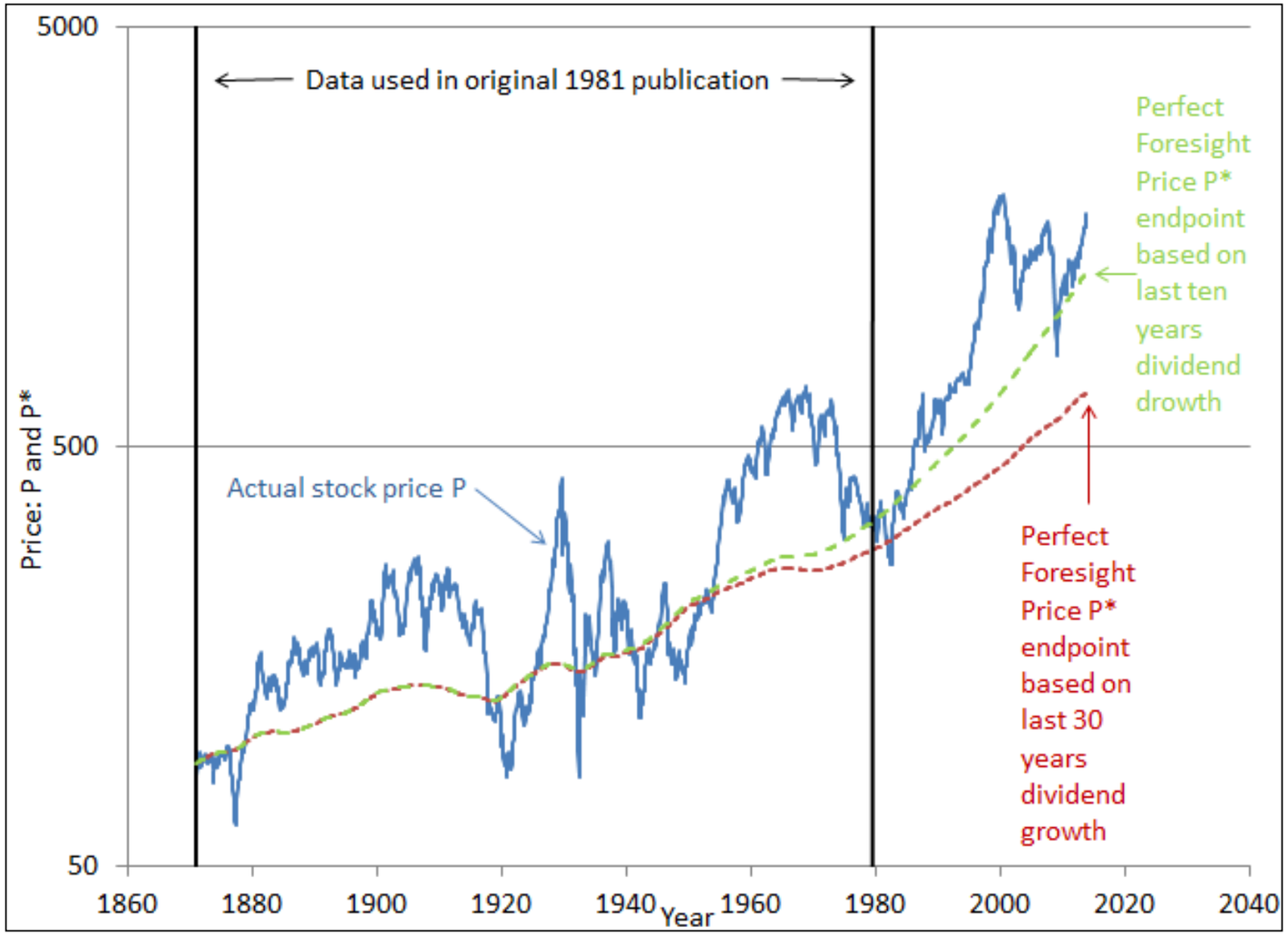


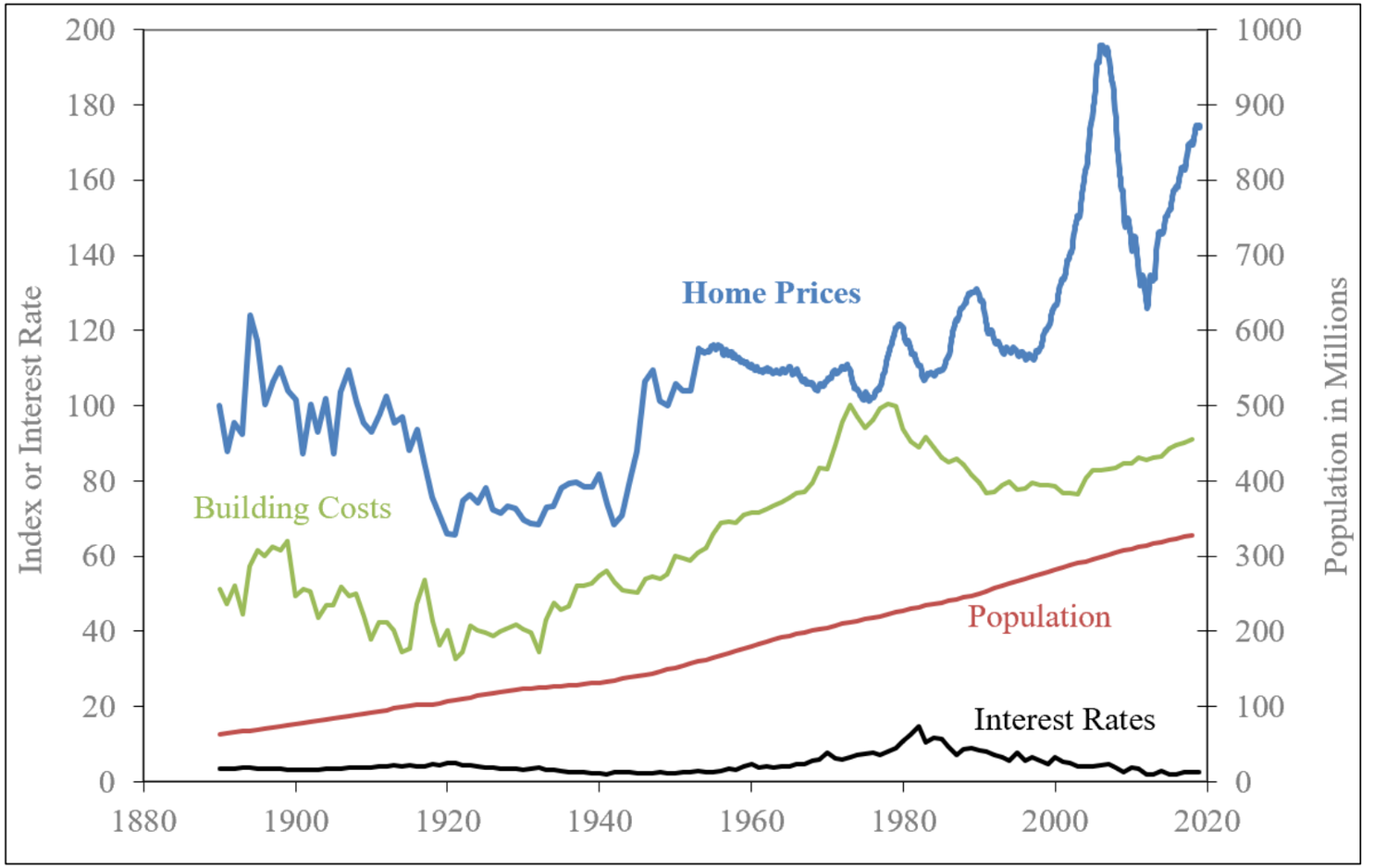
Figure 1from Shiller *Narrative Economics* 2019: JSTOR Counts of Word “Narrative” as Percent of All Articles, by Discipline



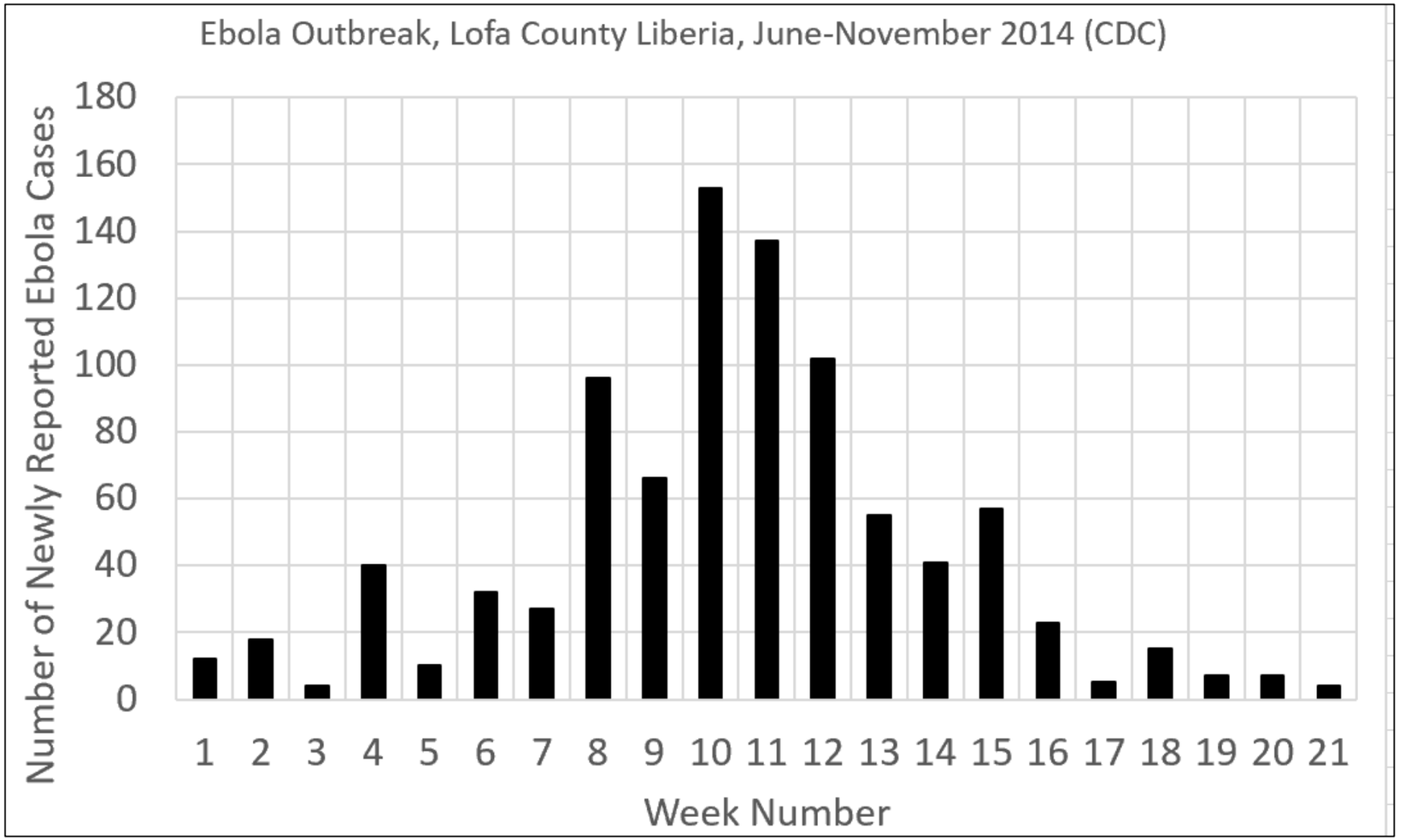
First Edition (Updated): Real Stock Prices 1871-2013
Actual (Blue) and Ex-Post Rational (Red)
Based on Shiller (Am. Econ Rev. 1981)



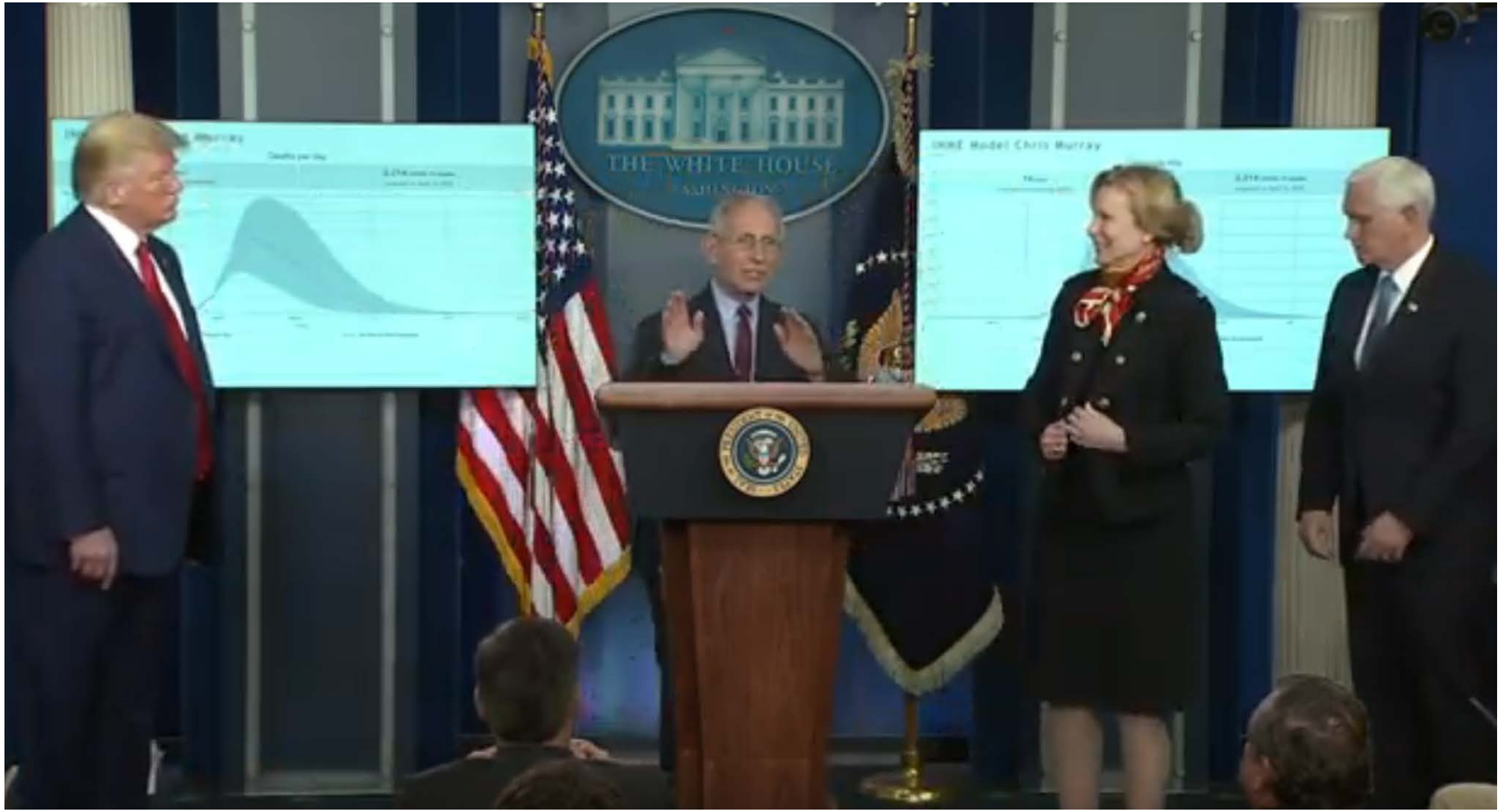
From Shiller *Irrational Exuberance* 3rd Edition (2012) Updated
Real Home Prices and Fundamentals 1890-2019
(Since 1975 Home Prices are Real S&P/CoreLogic/Case-Shiller National Home Price Indices)



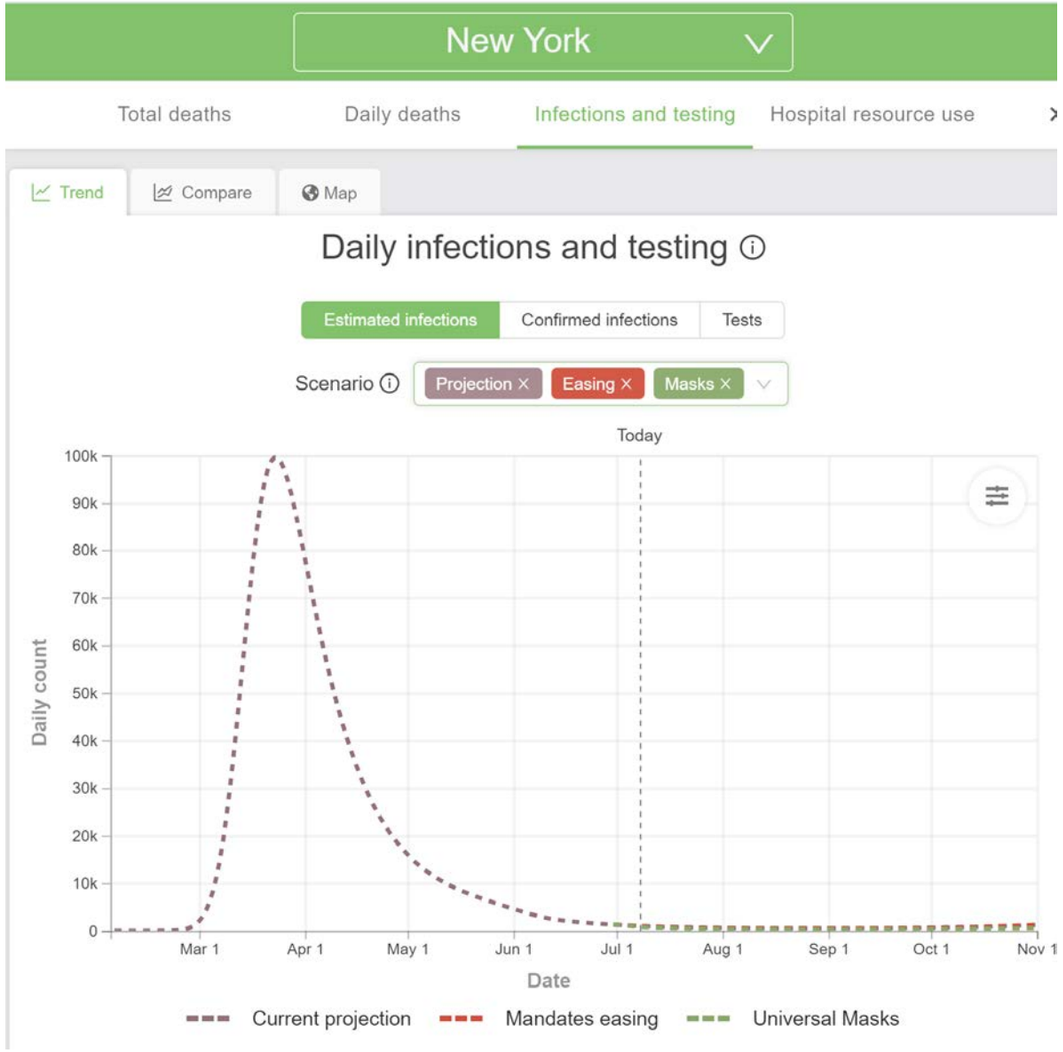
II. Learning from Medical Epidemiology: Example of Epidemic Curve



Coronavirus Task Force Press Conference March 31, 2020 Anthony Fauci, Deborah Birx



Epidemic Curve for New York COVID-19 as of July 8, 2020, IMHE University of Washington



Kermack-McKendrick SIR Disease Epidemic Model, 1927 (Compartmental or SIR Model)

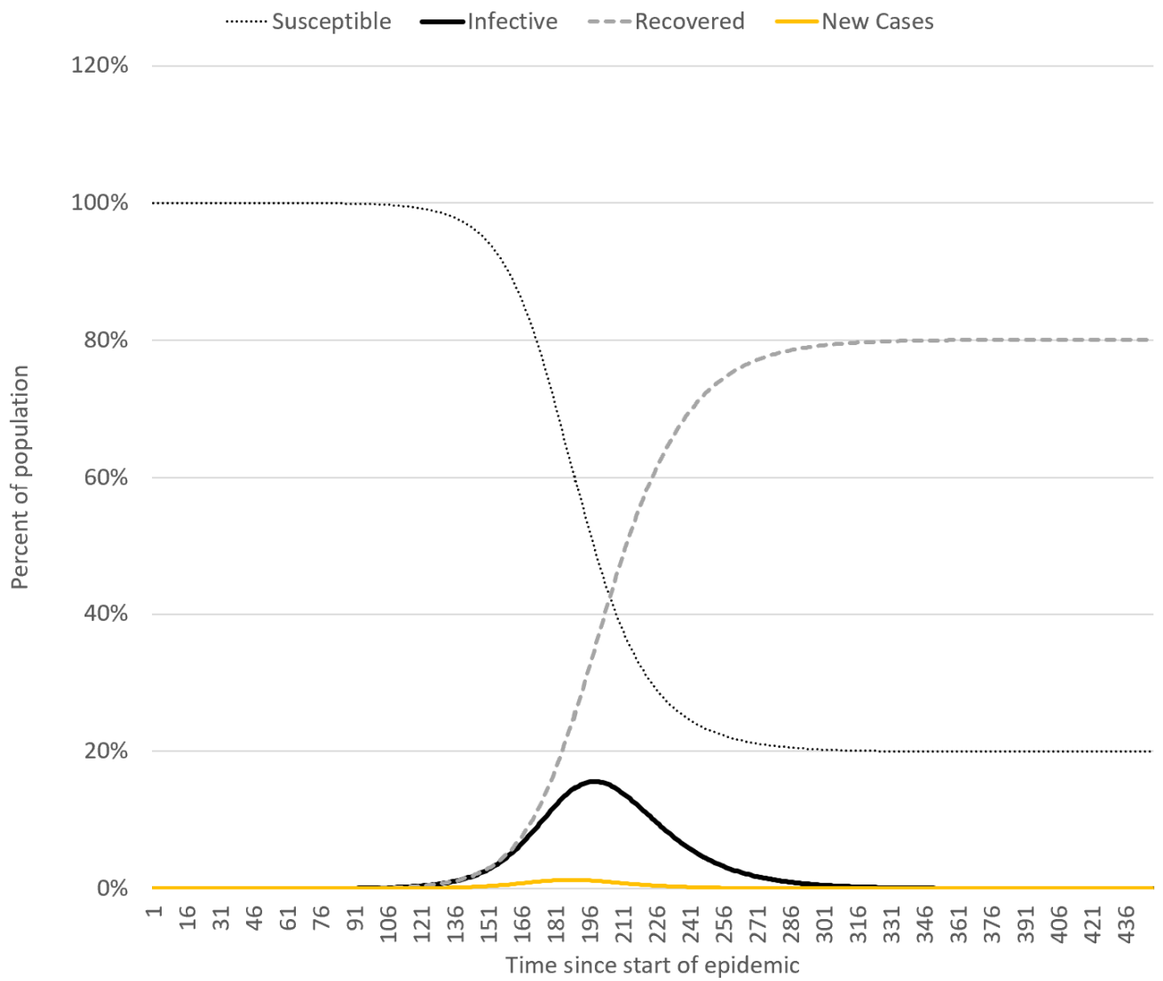
S=fraction of population susceptible, *I*=fraction of population infected and now contagious, *R*=fraction of population recovered and now immune, *S*+*I*+*R*=1, *c*=contagion parameter, *r*=recovery rate

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

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

$$\frac{dR}{dt} = rI$$

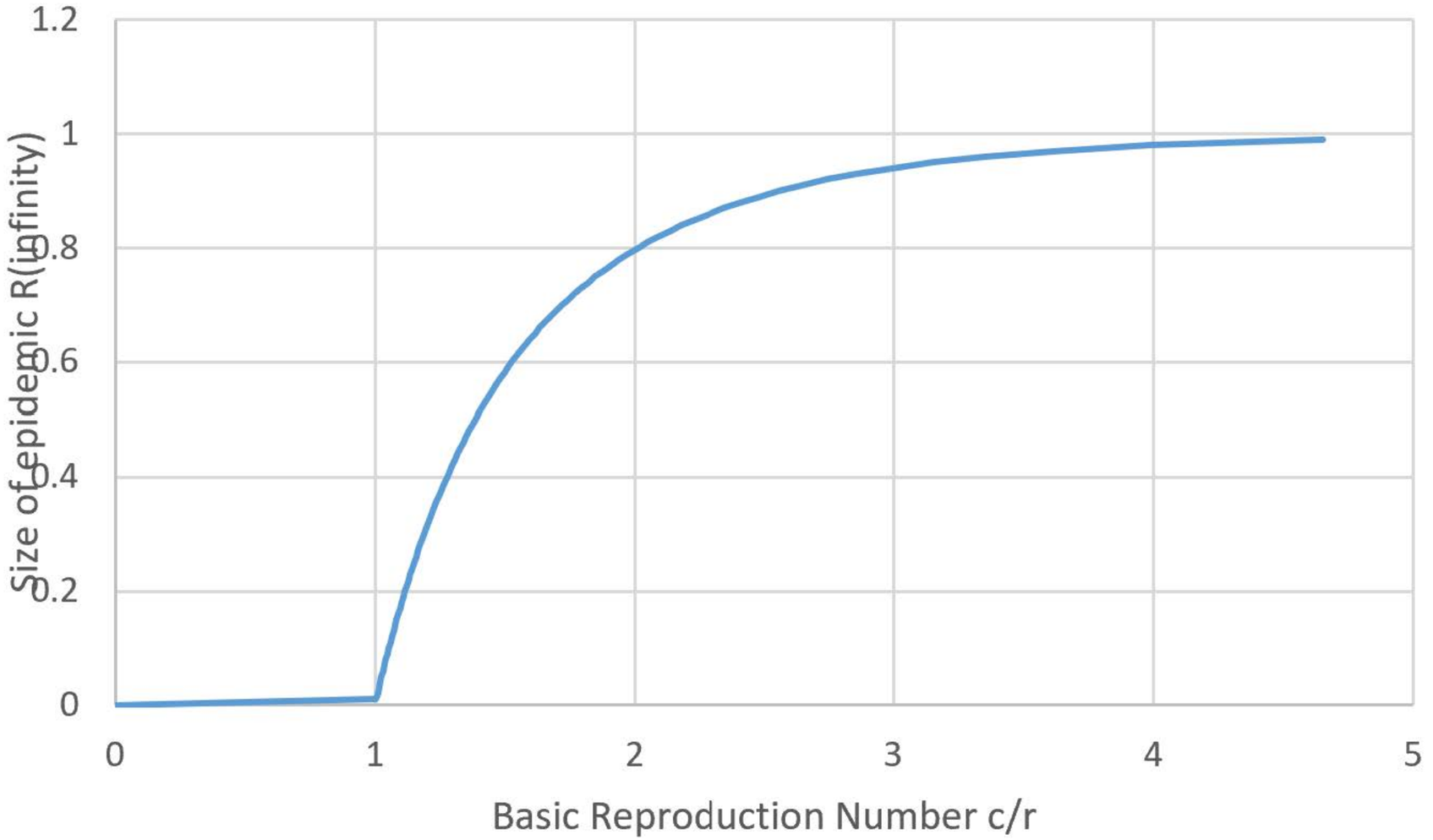
Figure 2: Time Paths of S, I, and R in Kermack-McKendrick Model $I(0)$=.0001%, c=0.28, r=0.14



Size of Kermack McKendrick Epidemic Determined by c/r

- dS/dR=-$(c/r)S$
- $S = (1 - I_0)e^{-\left(\frac{c}{r}\right)R}$
- I_∞=0
- $\frac{c}{r} = R_\infty^{-1} log \frac{1-I_0}{1-R_\infty}$
- Size of epidemic depends only on *ratio* of contagion parameter *c* to removal rate *r*, ratio called *basic reproduction number* or $\mathcal{R}_0$
- Speed of epidemic holding c/r constant depends on their *levels*

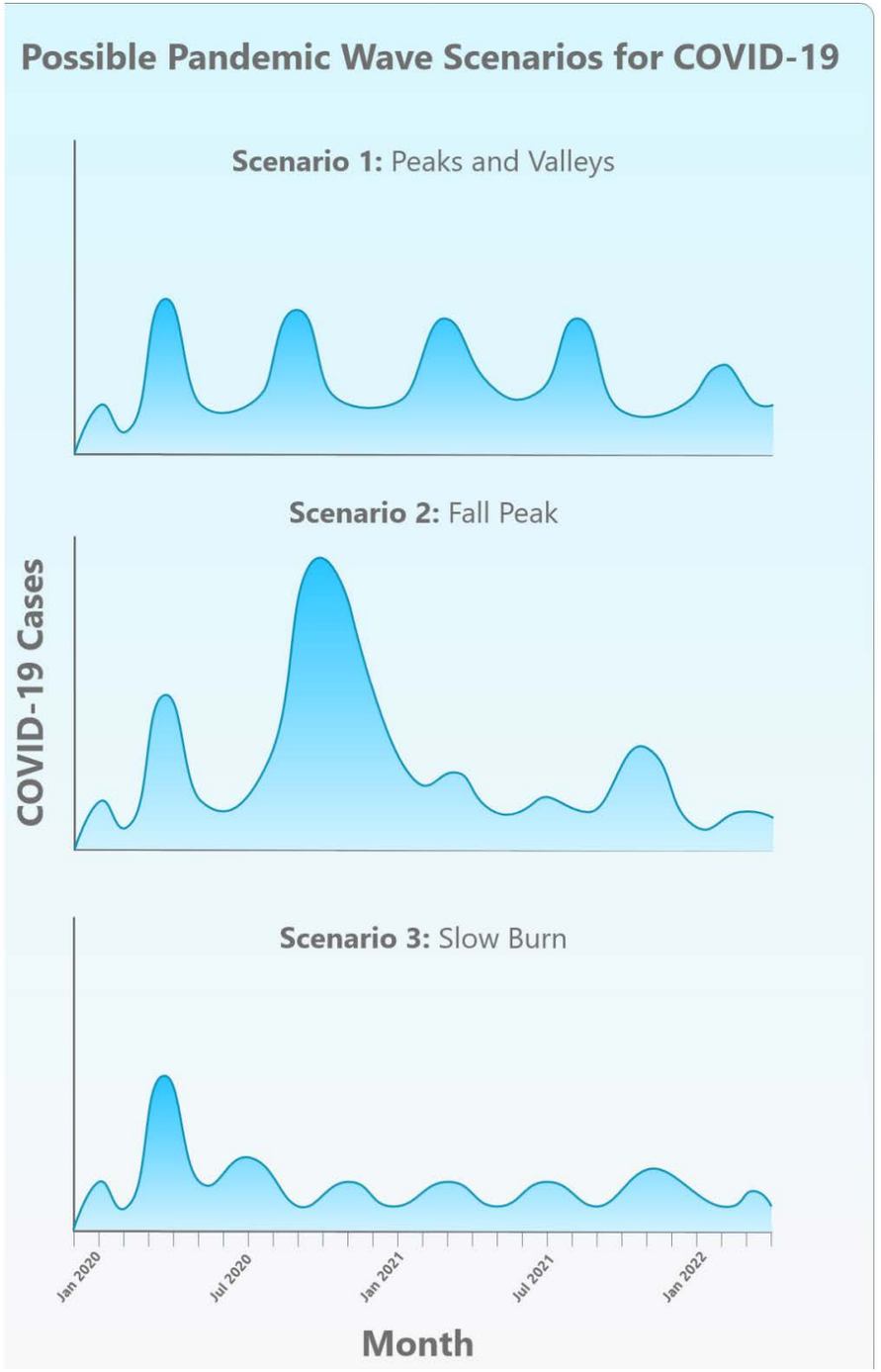
Size of Epidemic in Kermack-McKendrick 1927 Model *I*(0)=0



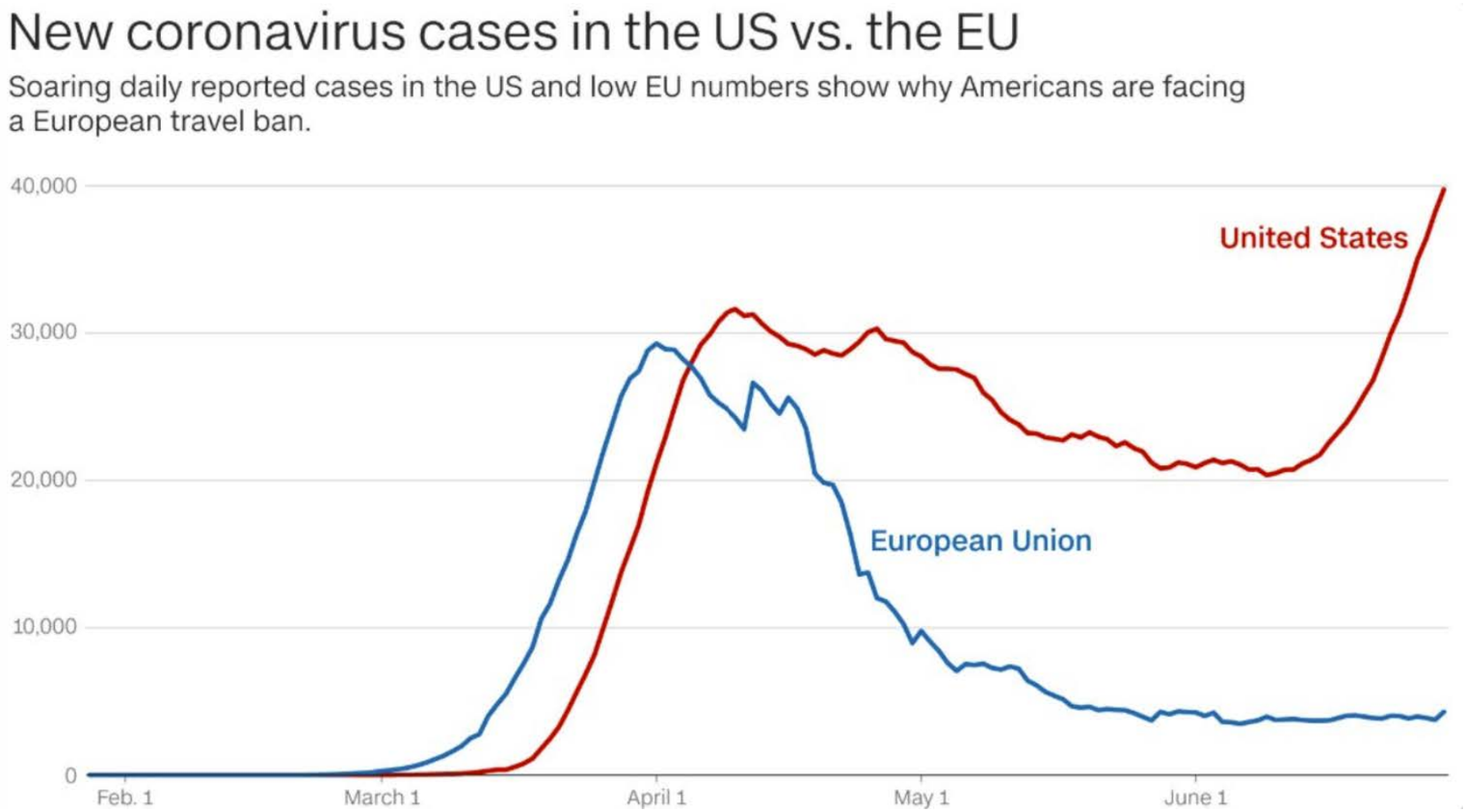
IHME Flattening the Curve

Epidemics in Waves

Three Possible Scenarios for COVID-19 2020-2022 from the Center for Infectious Diseases Research and Policy (University of Minnesota) April 30, 2020 https://www.cidrap.umn.edu/sites/default/files/public/downloads/cidrap-covid19-viewpoint-part1_0.pdf



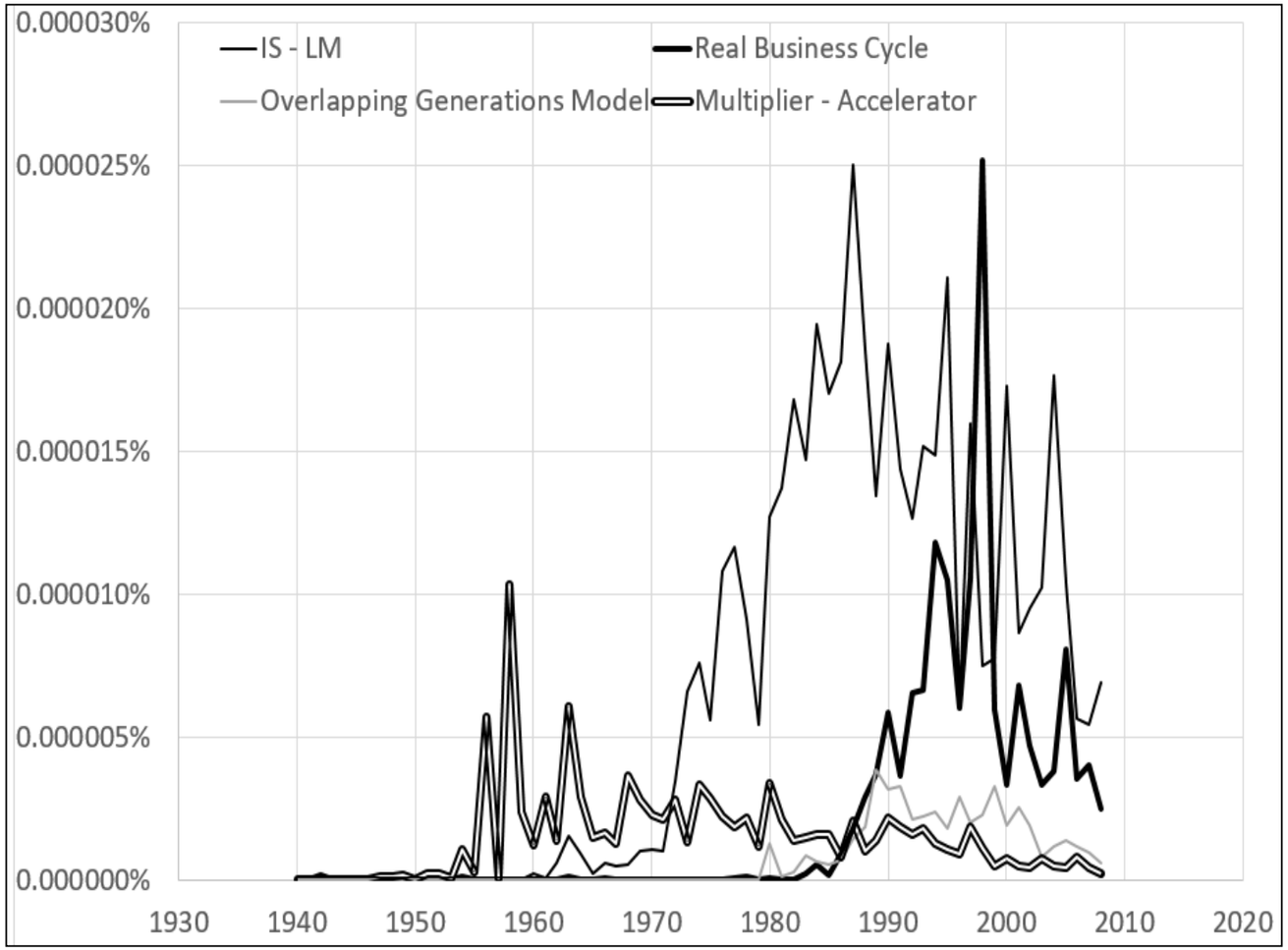
From Johns Hopkins University Center for Systems Science and Engineering (via CNN June 30 2020)



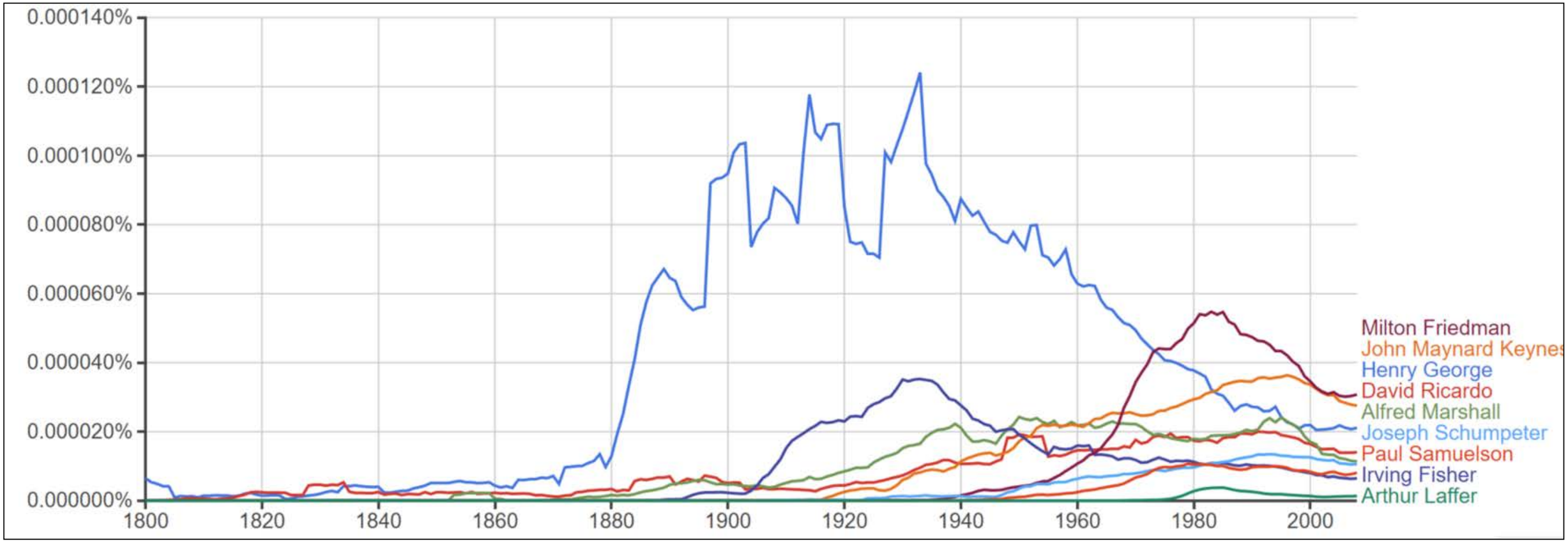
Mutations (in Virus, Narratives) Can Cause Waves of Epidemic

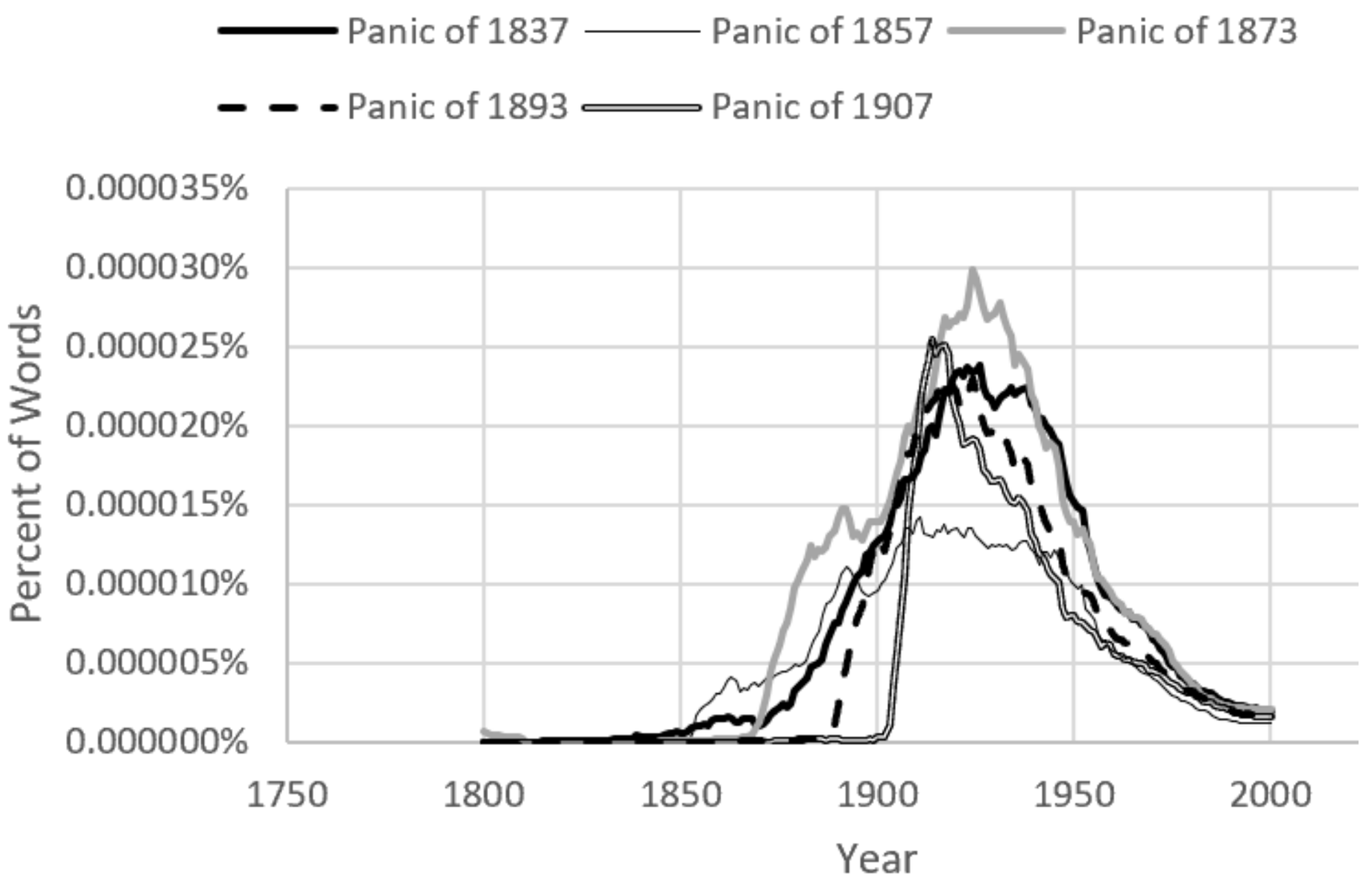
- Contagion rate may be increased by change in effectiveness of story telling due to details
- Pandemic of public concern about police brutality

Google Ngrams (Books) Counts for Some Major Macroeconomic Models 1940-2008



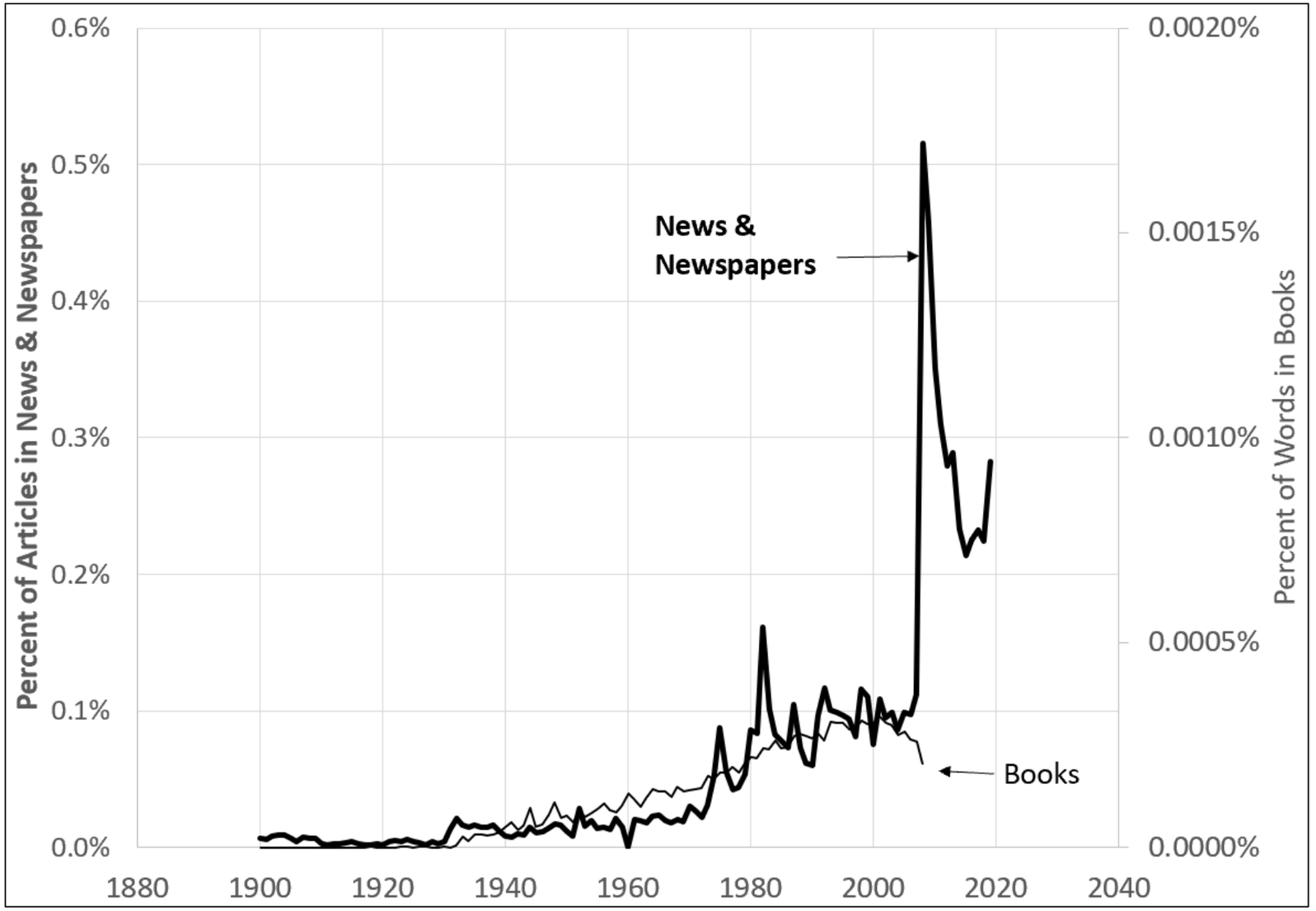
Google Ngrams Search for Famous Economists 1800-2008





1. Panic vs. Confidence Narratives

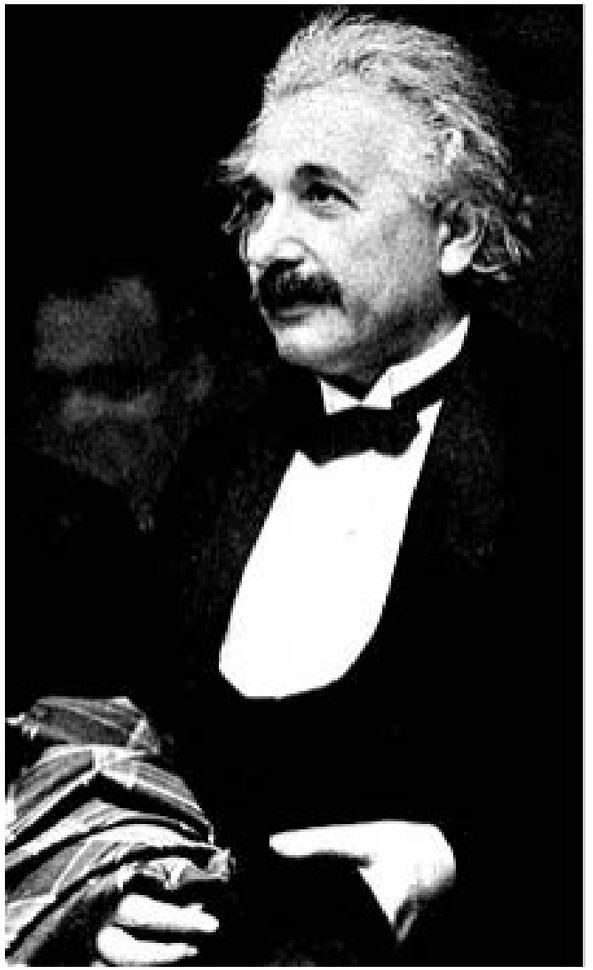
“Great Depression” Counts as Percent of Database each Year 1900-2019



4. Technological Unemployment

Albert Einstein on Technological Unemployment, 1933

- According to my conviction it cannot be doubted that the severe economic depression is to be traced back for the most part to internal economic causes; the improvement in the apparatus of production through technical invention and organization has decreased the need for human labor, and thereby caused the elimination of a part of labor from the economic circuit, and thereby caused a progressive decrease in the purchasing power of the consumers.



IV. The Future of Narrative Economics

- New technology will affect contagion, recovery rates
- New data availability—digitized text and speech
- New forms for economic theory
- Collecting better information on popular economic narratives should start now