

Why are interest rates so low?
Secular stagnation vs. Secular innovation

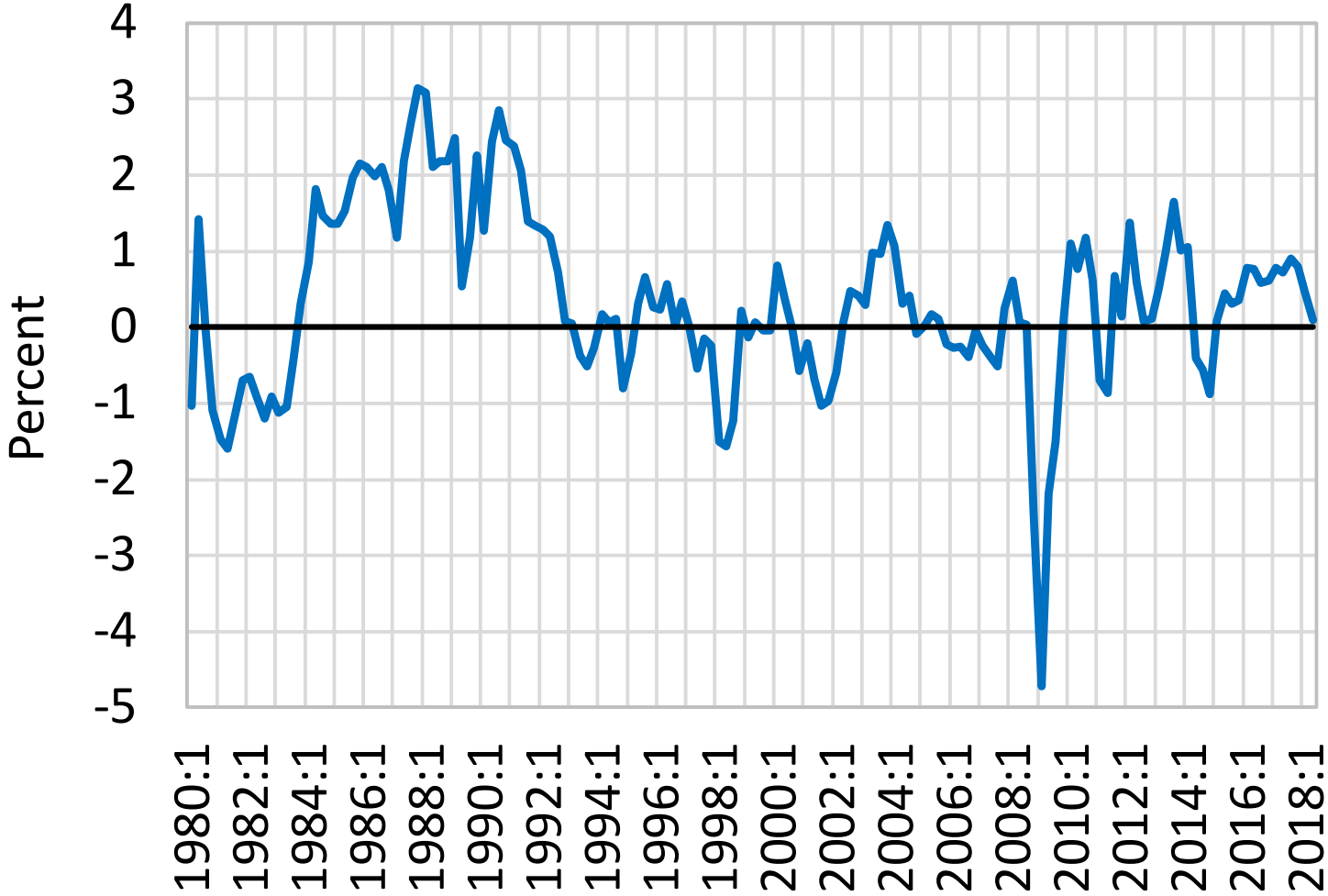
Tsutomu Watanabe
University of Tokyo & Nowcast Inc.
https://sites.google.com/site/twatanabelab/

October 20, 2018

Secular Stagnation Camp
Gloomy view

- Low interest rates stem from **low equilibrium real interest rate**
- Secular stagnation (Hansen 1939; Summers 2014)
  - low productivity growth (Gordon 2016)
  - savings glut (Bernanke 2005)
  - growing preference for safe assets (Caballero 2008)
  - demographic changes

The equilibrium real rate of interest (or the natural rate of interest) in Japan



Secular Stagnation Camp
Gloomy view

- Low interest rates stem from **low equilibrium real interest rate**
- Secular stagnation (Hansen 1939; Summers 2014)
  - low productivity growth (Gordon 2016)
  - savings glut (Bernanke 2005)
  - growing preference for safe assets (Caballero 2008)
  - demographic changes

Secular Innovation Camp
Rosy view

- Low interest rates stem from **low inflation expectations**
- Secular innovation: ICT, AI, Biotech, FinTech etc
- **Innovation lowers true inflation**. However, national statistical agencies fail to catch this (Goolsbee and Klenow 2018). But other people, including markets, can catch true inflation.
- Innovation raises equilibrium real rates, but not that much. Recent innovation does not require large investment (Summers 2014)

Nominal interest rate = **Equilibrium real rate** + **Inflation expectations**

Four Reasons Why I Support Secular Innovation Hypothesis

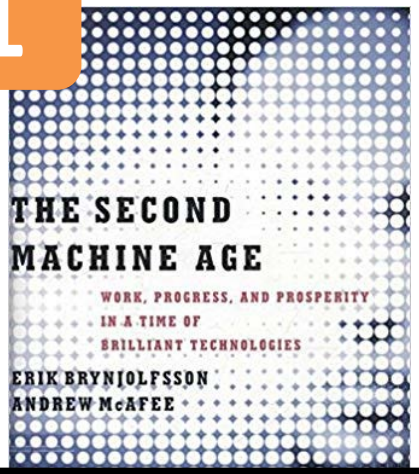
Fact #1: The bible for secular innovation camp sells much more than the bible for the other camp

Amazon Best Sellers

Our most popular products based on sales. Updated hourly.

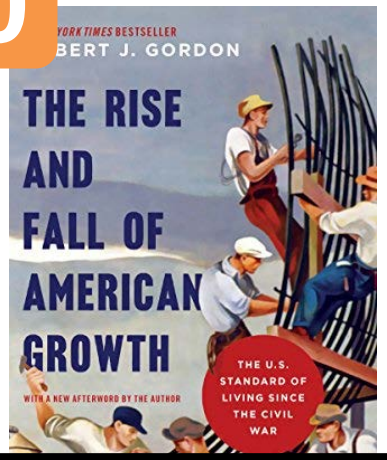
Best Sellers in Development & Growth Economics

#1



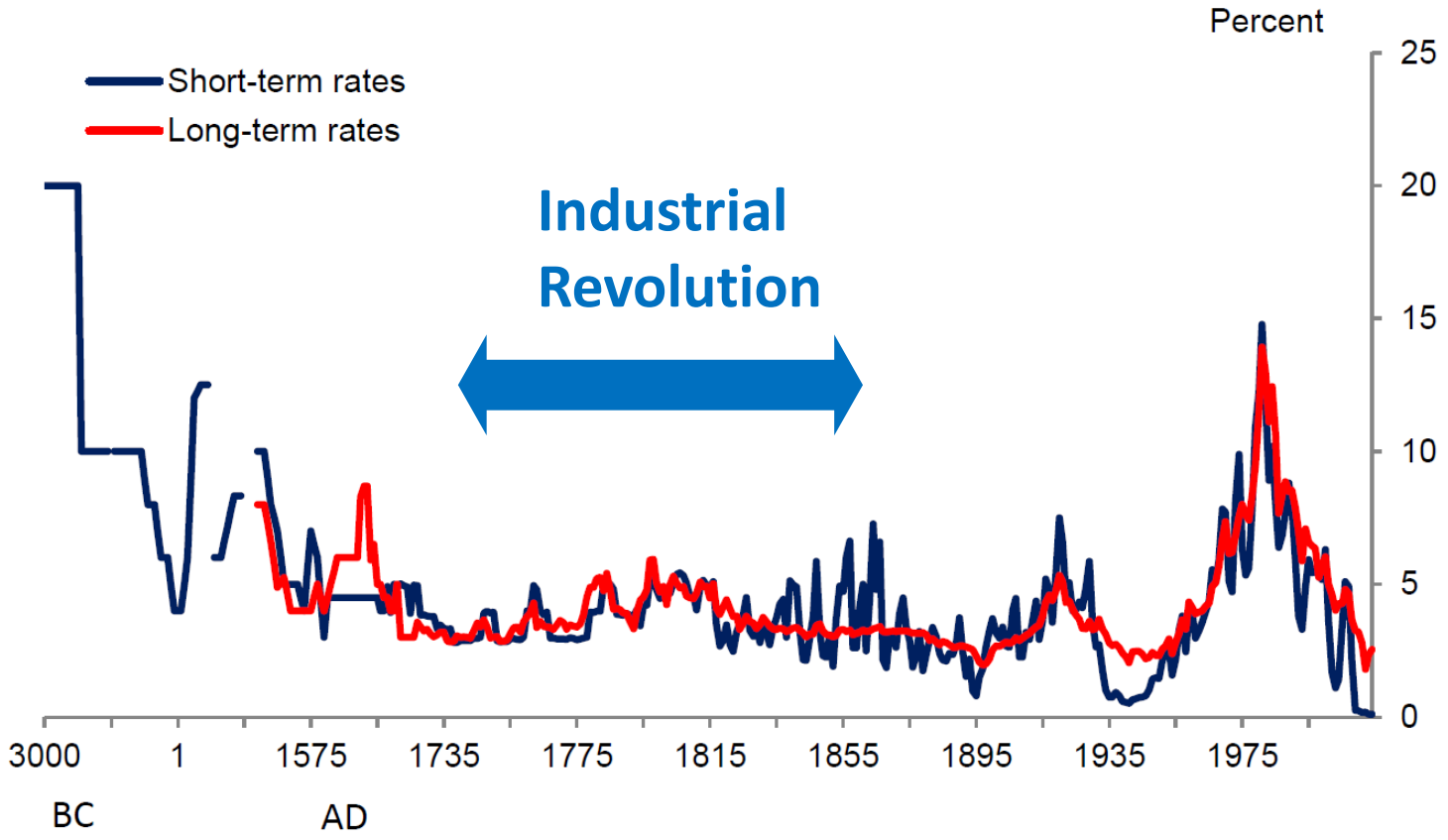
Secular Innovation Camp
The Second Machine Age
Erik Brynjolfsson, MIT

#40



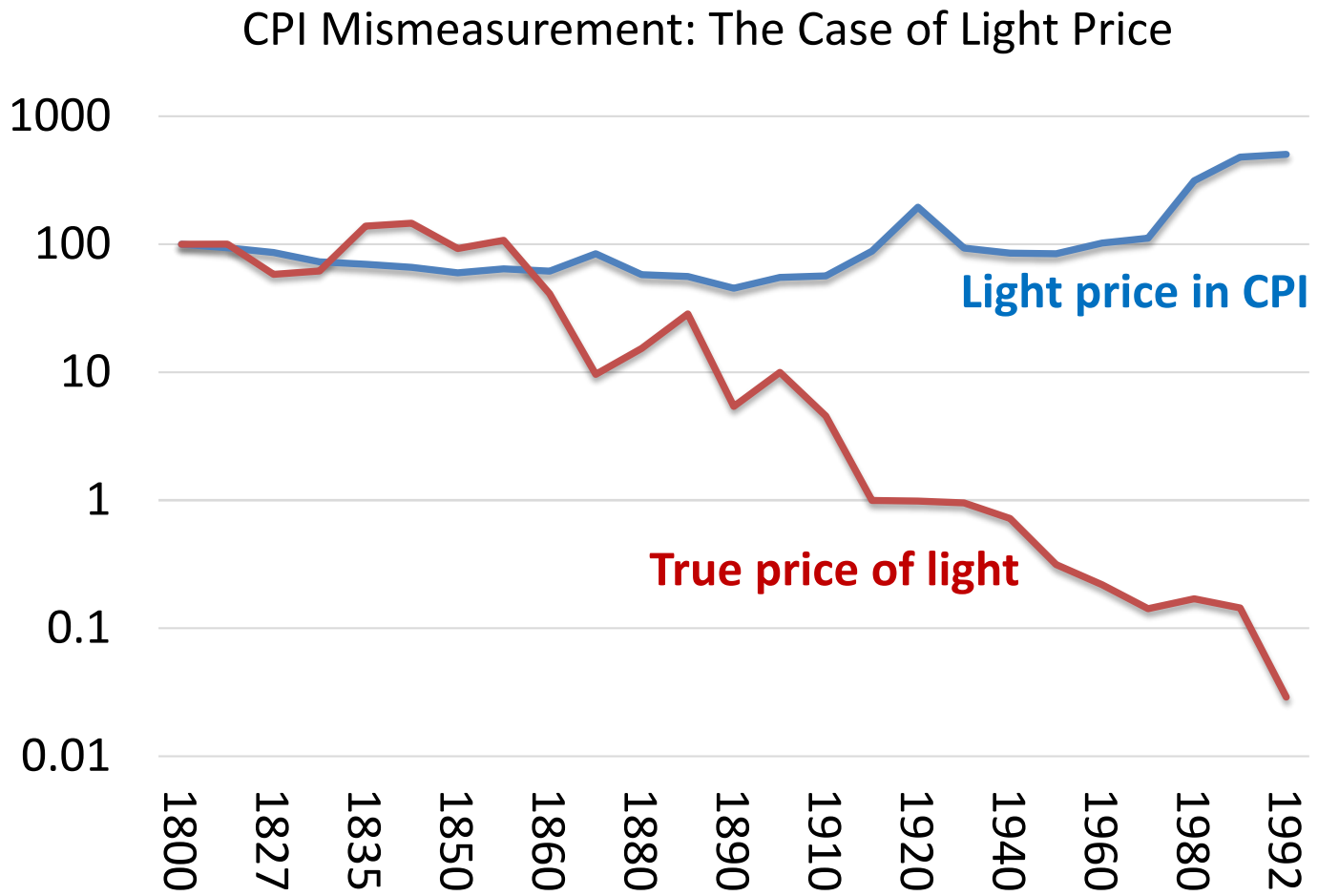
Secular Stagnation Camp
The Rise and Fall of American Growth
Robert Gordon, Northwestern

Fact #2: The historical evidence suggest that fluctuations in long-term rates come dominantly from fluctuations in inflation expectations rather than fluctuations in equilibrium real rates



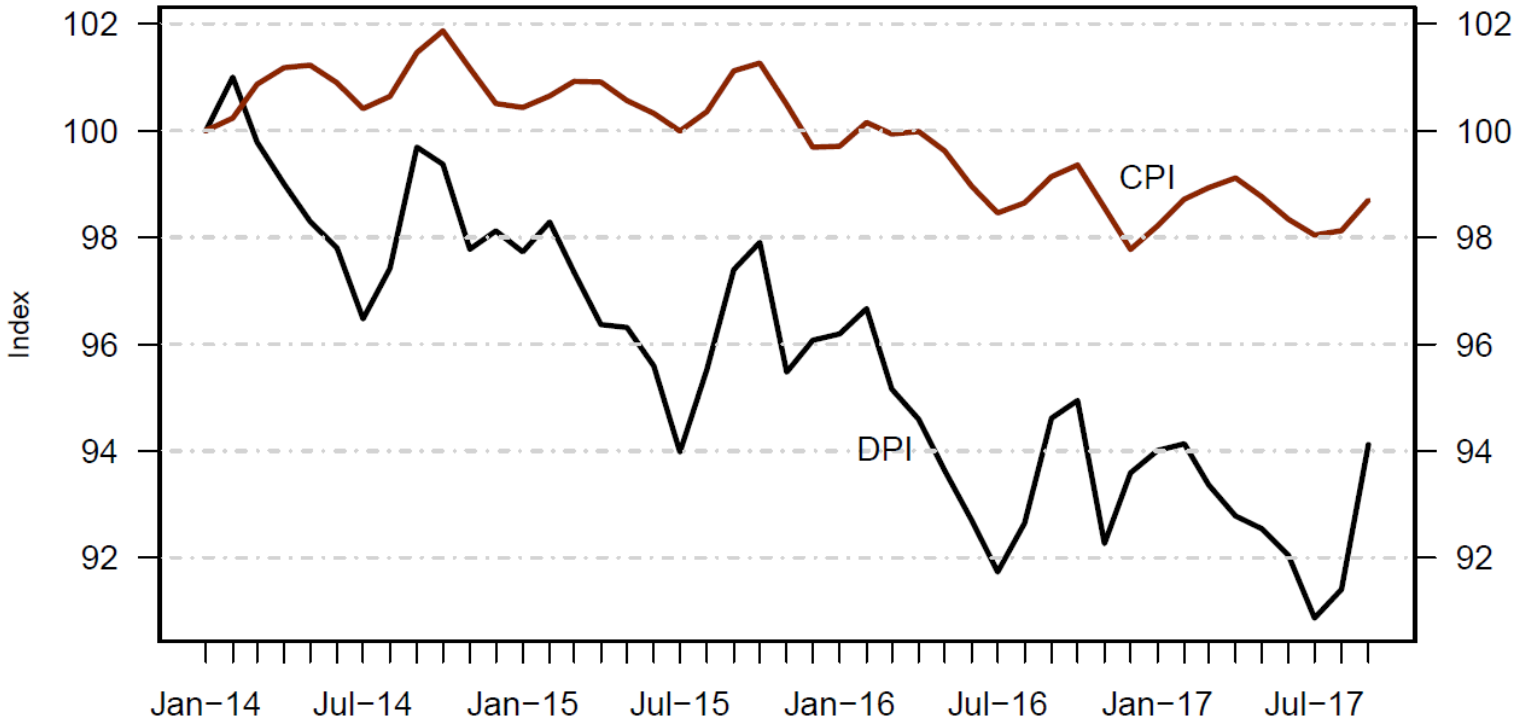
Source: Andrew Haldane, "Growing, fast and slow," Feb 2015.

Fact #3: The existing research suggests that official CPI substantially overestimated the prices of new products



Source: W. D. Nordhaus, "Do Real-Output and Real-Wage Measures Capture Reality? The History of Lighting Suggests Not." Jan 1996.

Figure 2: Cumulative Inflation, DPI vs. CPI.

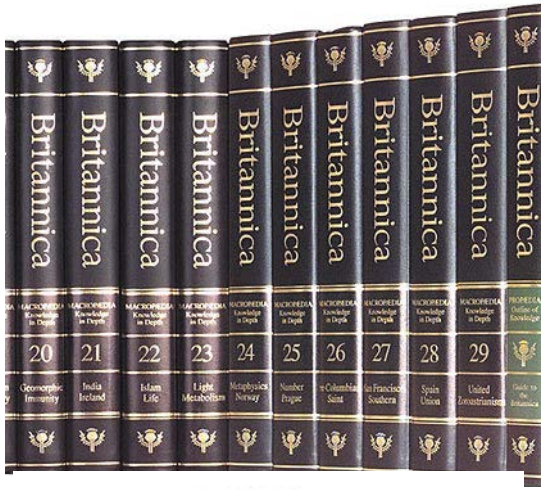


Source: A. D. Goolsbee, P. J. Klenow, "Internet Rising, Prices Falling," NBER Working Paper No. 24649, May 2018

Fact #4: Digital goods are almost FREE! However, the price decline due to this is NOT incorporated into official CPI. The improvement of living standards due to digital goods is NOT fully reflected in official statistics such as GDP



WIKIPEDIA
The Free Encyclopedia



ENCYCLOPÆDIA
Britannica

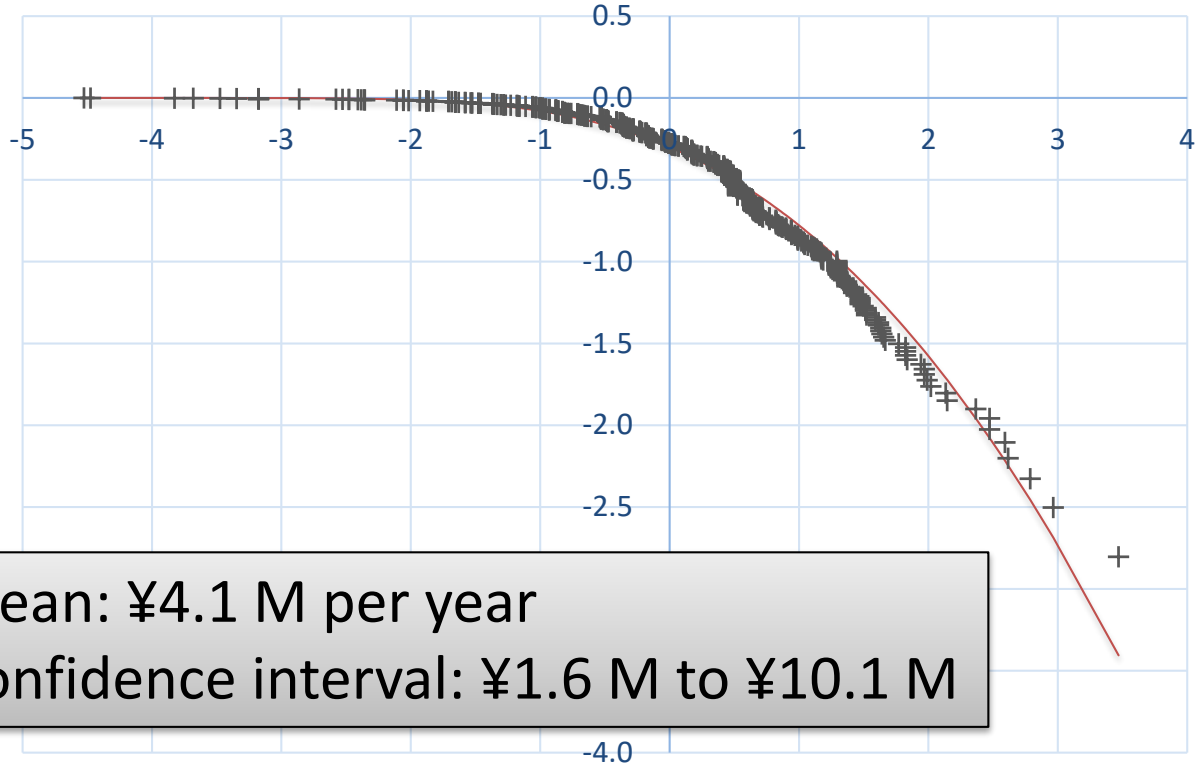
Utility > 0 = Production= Expenditure=Income

Utility ≒ Production=Expenditure=Income>0

Willingness to accept (WTA) for LINE

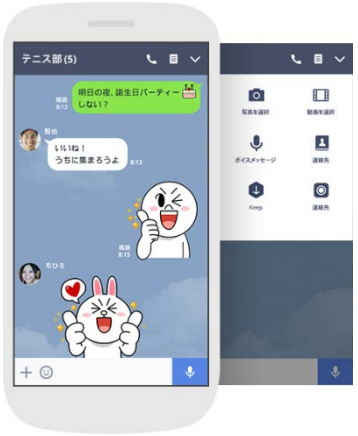
log of WTA on the horizontal axis

log of cumulative density on the vertical axis



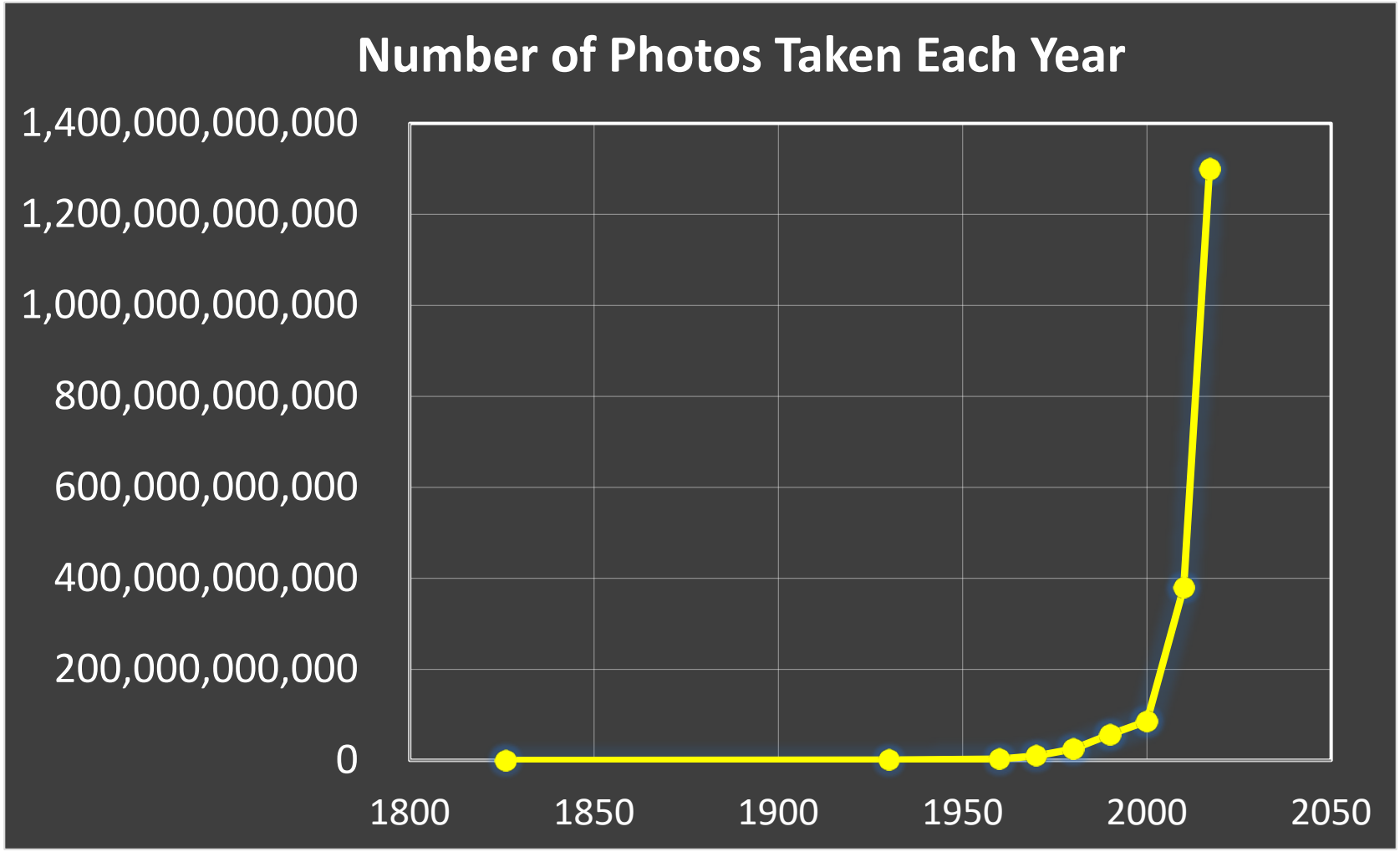
Mean: ¥4.1 M per year

Confidence interval: ¥1.6 M to ¥10.1 M



\+ Data

—— log normal dist with the same mean and SD as in the data


Number of Photos Taken Each Year
1,400,000,000,000
1,200,000,000,000
1,000,000,000,000
800,000,000,000
600,000,000,000
400,000,000,000
200,000,000,000
0
1800
1850
1900
1950
2000
2050

Why do I support secular innovation hypothesis rather than secular stagnation hypothesis?

1. The bible for secular innovation camp sells much more than the bible for the other camp
2. The historical evidence suggests that fluctuations in long-term rates come dominantly from fluctuations in inflation expectations rather than fluctuations in equilibrium real rates
3. The existing research suggests that official CPI substantially overestimated the prices of new products
4. Digital goods are almost FREE! However, the price decline due to this is NOT incorporated into official CPI

Secular Stagnation Camp
Gloomy view

- Low interest rates stem from **low equilibrium real interest rate**
- Secular stagnation: low productivity growth; savings glut; growing preference for safe assets; demographic changes

- CB and Govt will have a hard time.
- The ZLB will be binding more often in the future. CBs will be forced to adopt again FG, QE, NIRP, or something else.
- CBs may need to raise the target rate of inflation
- Interest margins will be smaller so that banks are less profitable. Financial system may be unstable (Fischer 2016)

Secular Innovation Camp
Rosy view

- Low interest rates stem from **low inflation expectations**
- Secular innovation: ICT, AI, Biotech, FinTech etc
- Innovation lowers true inflation.

- No worry about future!
- No reason for govt and CB to change macro policy. The most urgent thing is to improve methodology adopted by statistical agencies.
- CBs may need to lower the target rate of inflation
- More new technologies and more entrants into financial industry
- More focus on micro policies like consumer protection, privacy etc