DJIA approaching previous all-time record high close of 26,828

What might U.S. markets do next?

Lewis Larsen

April 15, 2019

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Long-term outlook going forward from here

You still ain't seen nothin' yet.

Image credit: Hywards/Dreamstime

See Slides #62 - 64 for final discussion, reasoning, and conclusions

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Purplish-colored hyperlinks in all PowerPoints are 'live'. Double-clicking on link uploads referenced source document into another window of local Internet browser

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Synopsis of DJIA closing records during calendar year 2018

DJIA's highest-ever closing record of 26, 828.39 was set on Oct. 13, 2018

Dow Highest Closing Records

Its Top Highs and Lows Since 1929

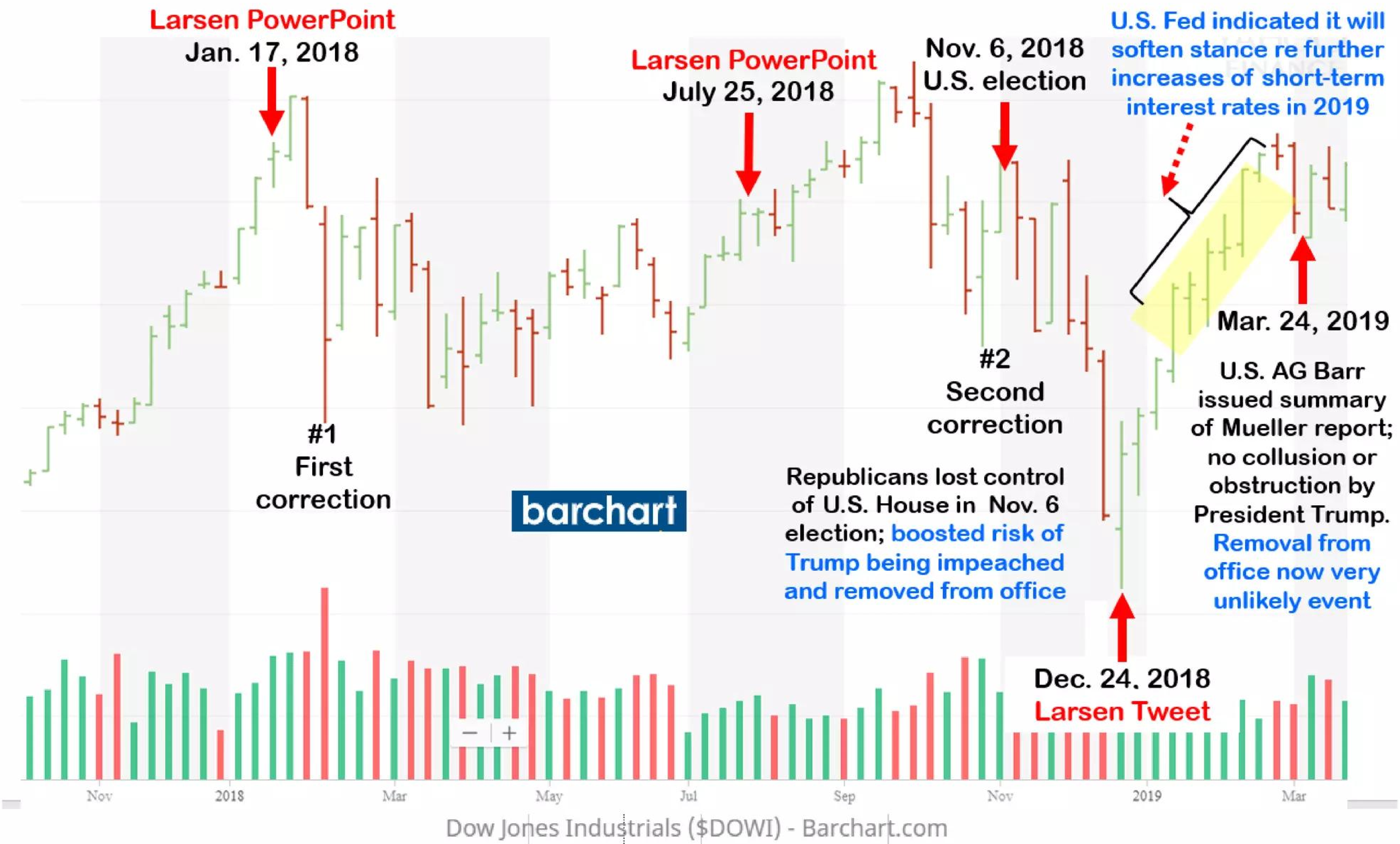
the balance BY KIMBERLY AMADEO • Updated February 08, 2019

"Dow Jones Industrial Average's highest closing record is 26,828.39, set on October 3, 2018. It followed a record set the previous day. Investors were confident in a growing U.S. economy. Since then through January 2019, the Dow has traded sideways. Investors are concerned about President Trump's trade wars and the impact of the government shutdown. The records set in October were the first ones since the Dow reached 26,616.71 on January 26, 2018."

"After hitting that peak, the Dow went into free fall. The index fell 4 percent the next week. On February 8, it entered a market correction when it fell 1,032.89 points to 23,860.46. On August 27, 2018, the Dow ended the six-month correction when it reached 26,049.64. It was 10 percent above its closing low of 25,533.20, reached on March 23. Investors were encouraged by progress on Trump's NAFTA renegotiation. It was the longest correction since 1961 when it was in correction for 223 sessions."

https://www.thebalance.com/dow-jones-closing-history-top-highs-and-lows-since-1929-3306174

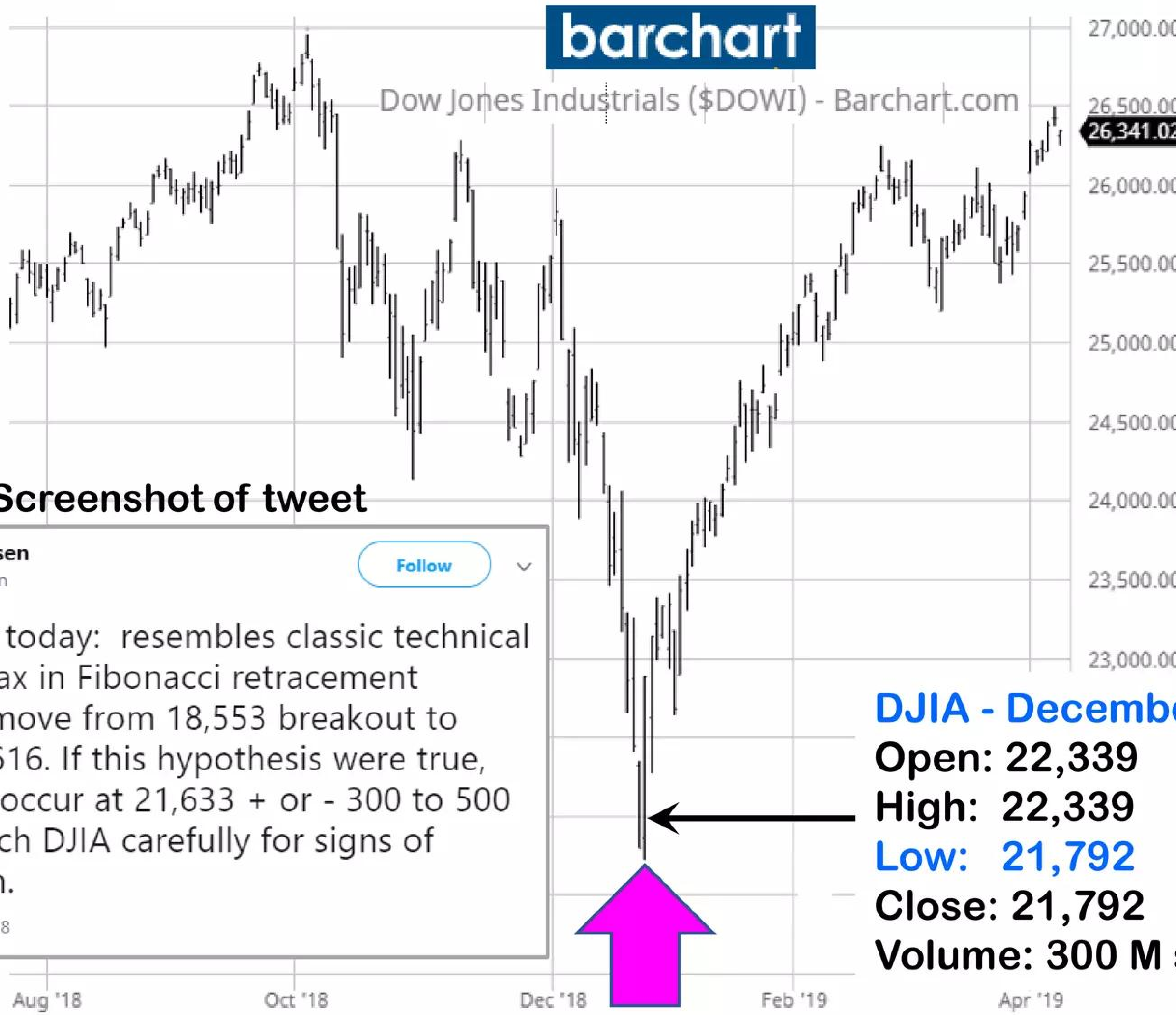
DJIA price action and key events from Jan. 2018 to April 2019
Had new all-time closing high and 2 technical corrections during that time



Dec. 24, 2018: Larsen public tweet was posted at 10:25 A.M.

Identified key day of selling climax and ~ low during 2nd DJIA correction

https://twitter.com/lewisglarsen/status/1077269034775777283



Screenshot of tweet

Lewis Larsen
@lewisglarsen
Follow

DJIA action today: resembles classic technical selling climax in Fibonacci retracement (61.8%) of move from 18,553 breakout to high of 26,616. If this hypothesis were true, low should occur at 21,633 + or - 300 to 500 points. Watch DJIA carefully for signs of stabilization.

10:25 AM - 24 Dec 2018

DJIA - December 24, 2018
Open: 22,339
High: 22,339
Low: 21,792
Close: 21,792
Volume: 300 M shares

Jan. 17, 2018: PowerPoint was publicly posted on SlideShare

Discussed macroeconomic/market landscapes; made future projections

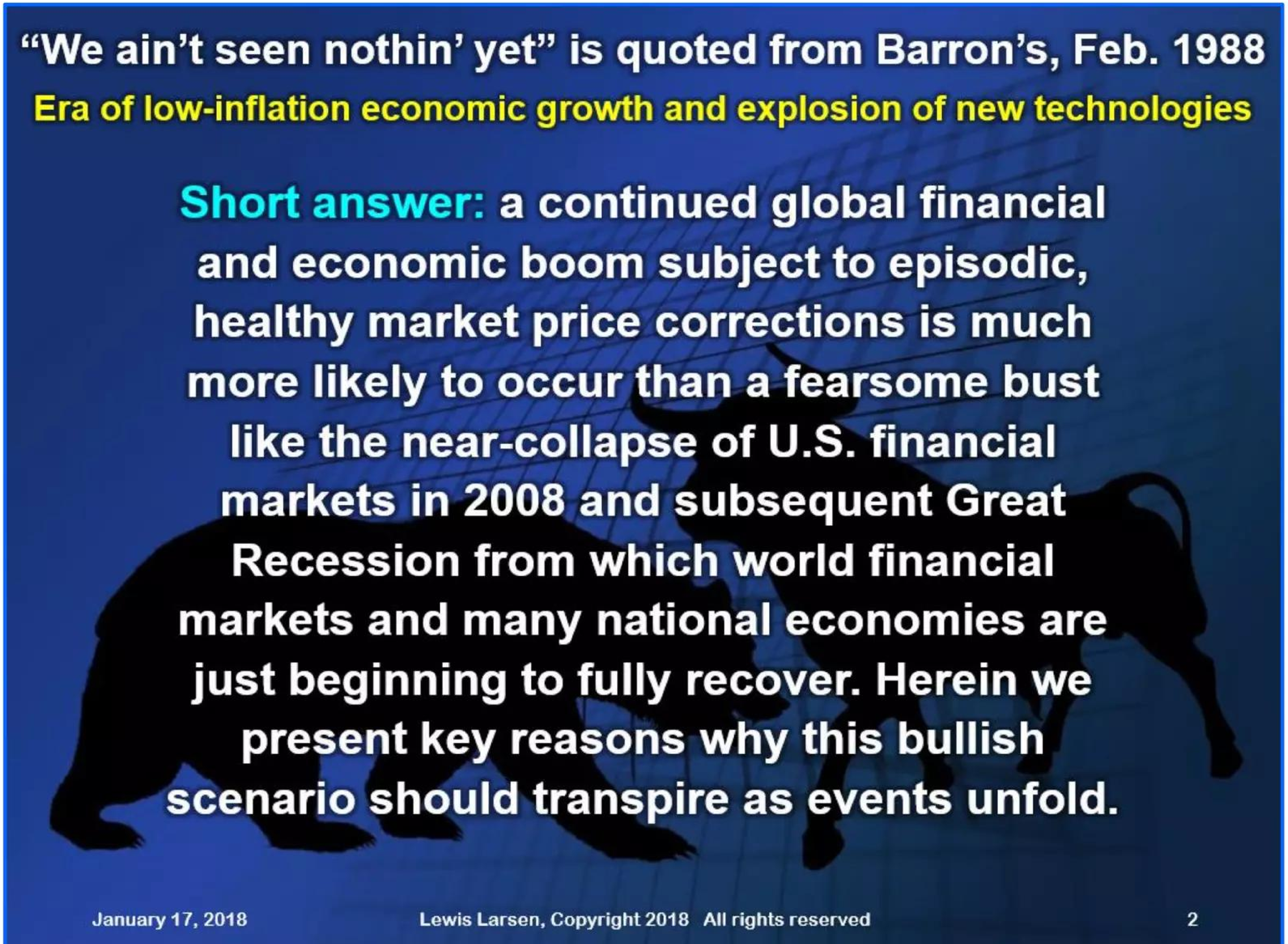
Document explains details re future projections – all purplish hyperlinks are live

75 slides

https://www.slideshare.net/lewisglarsen/lewis-larsen-dowjones-industrial-average-reaches-26000-what-happens-next-boom-or-bust-jan-17-2018

Jan. 17, 2018 slide #2: boom is much more likely than a bust

Present era has low-inflation economic growth and technology explosion



Jan. 17, 2018 slide #24: U.S. manufacturing cost-competitive

U.S. recently achieved ~ parity with China on certain manufacturing costs

U.S. manufacturing is competitive again, as forecast in 1986

Japan, China, and other key competitors lost prior labor cost advantages

bcg.perspectives
by THE BOSTON CONSULTING GROUP

"Honing US manufacturing's competitive edge" H. Sirkin, J. Rose, and R. Choraria
The Boston Consulting Group *BCG Perspectives* January 11, 2017

- "Offshoring has dropped dramatically, particularly with regard to the world's biggest workshop: China … The main reason for this change is economics. As The Boston Consulting Group has documented, the cost competitiveness of US manufacturing has been improving significantly over the past decade, compared with many of its biggest trading partners --- most notably China."
- "In terms of direct costs, in fact, the US playing field is essentially level with Yangtze River Delta, China's chief production zone. Despite the recent weakening of the yuan, and factoring in the differences in productivity and energy costs, China's manufacturing cost advantage over the US shrank from 14% in 2004 to an insignificant 1% in 2016, according to our analysis of data collected for the BCG Global Manufacturing Cost- Competitiveness Index … When indirect costs for shipping, inventory, and other expenses are included, it is now less costly to manufacture a wide variety of goods in the US if that is where they will be consumed."

https://www.bcg.com/publications/2017/lean-manufacturing-operations-honing-us-manufacturings-competitive-edge.aspx

Jan. 17, 2018 slide #67: DJIA's 6,000 point gain was 'painless'

Warned DJIA correction of as much as 4,000 points was probably overdue

Brief outline of what could happen in the near future

Key forces driving 30-year secular uptrend in stock prices still operating

Key long-term macroeconomic and technological forces that have driven 30-year secular uptrend in stock market prices and decline in both interest and inflation rates continue to operate as explained in Larsen qualitative models.

- Recent increase of ~6,000^{+} points (33%) in DJIA over past year occurred with limited price volatility and little retracement or any significant % technical corrections. Consequently, a healthy downward technical price correction in stock market indices is probably overdue after such a painless meteoric rise. Such a correction would typically entail a hard, freakish decline --- seemingly out of nowhere --- followed by choppy, sideways trading-range market for some period of time. Size of break would depend on exactly what triggered it. 66% retracement or 4,000 points ("Fibonacci" correction) is not impossible and would not violate parametric boundaries of long-term secular uptrend. At today's price levels, initiating new positions or adding to previous positions on strength is not prudent; buying during corrections would be a better strategy

- On Black Monday 1987, I was trading and advising clients and well-remember the terrifying, seemingly unending market slide on that day. Armed with theory and models, I was pretty sure that the market break was purely technical and triggered by unnecessary Fed tightening, so we bought stocks and got some amazing bargains. Markets recovered very quickly after that memorable event.

Jan. 17, 2018 slide #68: ~3% GDP growth crucial for economy

Said U.S. productivity will be increasing and restrain wage-price inflation

Brief outline of what could happen in the near future

Technology explosion continues: large gains in productivity will resume

- 2008 housing and financial market debacles and their still-lingering aftermath were enormously damaging to financial situations of U.S. households. Thus, large-scale shifts between financial and tangible assets in U.S. household investment portfolios will remain frozen, on-hold until real family incomes start increasing substantially for a broad swath of U.S. population. That income can only be provided by protracted U.S. GDP economic growth of 3% or more
- Patenting activity and new product development are exploding and continue to accelerate. Static since ~ 2008, growth in worker productivity will soon resume and reaccelerate once new capital investments in technology are made and solutions begin to bear fruit. In U.S. and other advanced economies, capital and technology are presently replacing human labor at highest rate since the First Industrial Revolution. For example, President of Jack in the Box restaurants announced they might replace human cashiers with computerized kiosks because of increase in minimum wage (*Business Insider*, Jan. 9, 2018)
- Resumption of strong increases in productivity will put a strong damper on wage-price inflation and further reduce costs of goods and services. This will create downward pressures on prices of manufactured products and help prevent overall inflation rates from increasing very much beyond today's levels. This will help keep short- and long-term interest rates in roughly steady-state at relatively low values; 30-year secular downtrend in those rates is over, for now

Jan. 17, 2018 slide #69: business cycle is still alive and well

Said Fed will raise rates and flatten yield-curve; higher GDP growth likely

Brief outline of what could happen in the near future

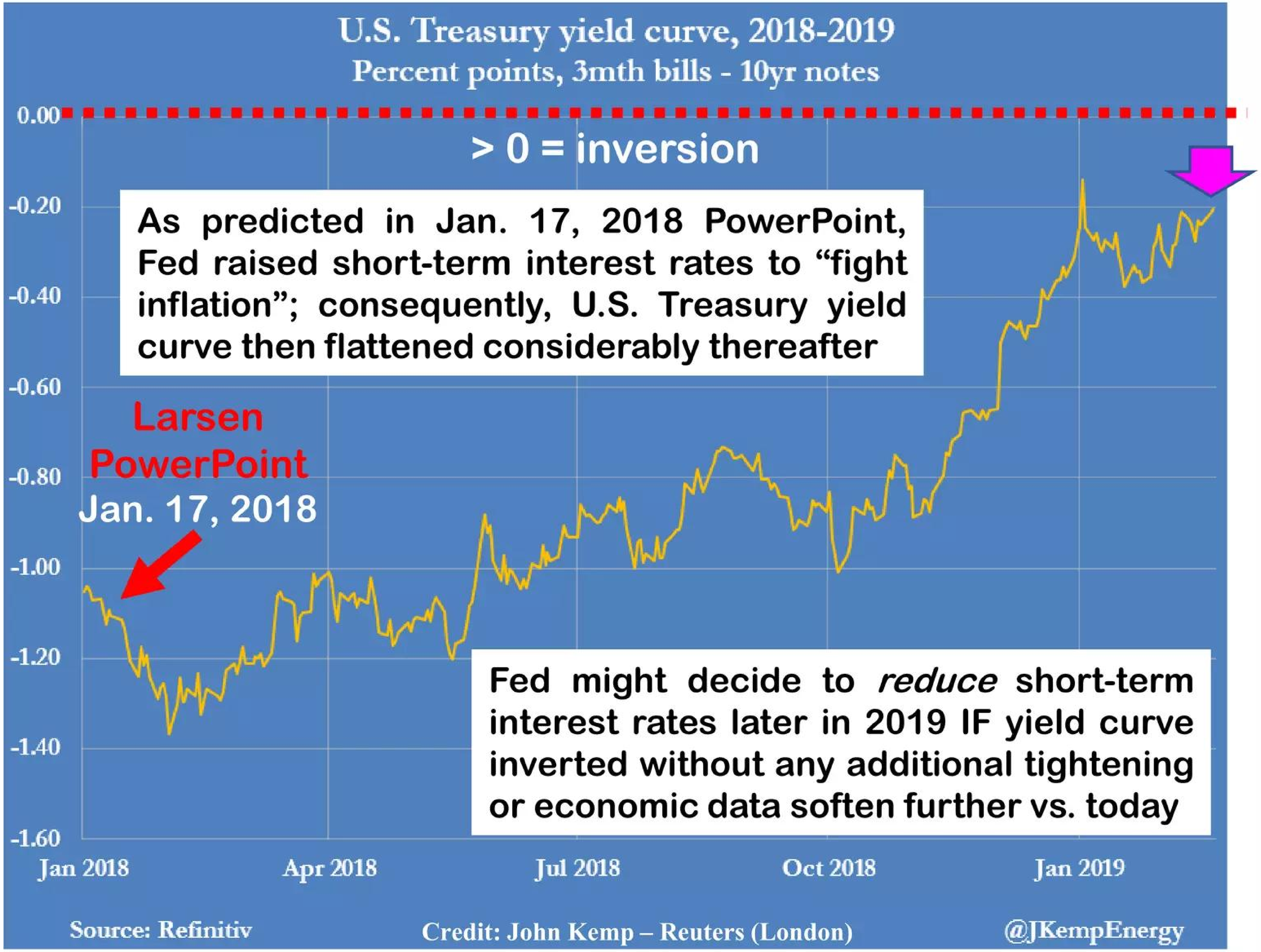
LENRs are revolutionary radiationless, waste-free nuclear energy source

- Macroeconomic business cycles still exist, although magnitudes of their peaks and troughs are greatly diminished by widespread adoption of computerized just-in-time inventory management practices in developed economies. These cycles will create oscillations around continued secular uptrend in stock prices: recessions will cause temporary market corrections for duration of economic slowdowns.
- U.S. Federal Reserve presently appears to be hell-bent on more tightening to "fight inflation." This could trigger temporary market corrections, depending on how it is perceived by investors. In any case, its primary effect would be to flatten or invert the yield-curve. Fed actions will have minimal effects on long-term interest rates as long as ongoing CPI inflation rate continues to remain well below 3 - 5% threshold
- U.S. had already regained international competitiveness before Trump's very bold initiatives to slash burdensome regulations and cut corporate tax rates. Those new actions further boosted U.S. economic prospects: 4 - 6% GDP growth now possible
- Ideas in *Barron's* articles (1986, 1988) foreshadowed some thinking in books by Rifkin ("The Third Industrial Revolution" 2011) and Schwab ("The Fourth Industrial Revolution" 2016). We agree distributed renewable energy sources like wind and solar should be broadly deployed to supplant fossil fuels as they are depleted and help mitigate global warming. However, intrinsic energy densities of renewables are vastly lower; they cannot 100% replace all fossil and nuclear energy sources.

January 17, 2018 69

Jan. 17, 2018: said Fed would raise rates & flatten yield-curve

Recent policy shift: no further rate increases in 2019 to prevent inversion



July 25, 2018: PowerPoint was publicly posted on SlideShare

Discussed market events to date in context of Larsen's future projections

See document re details about future projections – all purplish hyperlinks are live

January 17, 2018: Larsen released PowerPoint on SlideShare

Discussed today's macroeconomic/market landscapes; made projections

How well have projections performed so far from January 2018 through today?

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July 25, 2018

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July 25, 2018 1

41 slides

https://www.slideshare.net/lewisglarsen/january-2018-larsen-macroeconomic-and-market-scenarios-plus-projections-evaluates-performance-to-date-july-25-2018

July 25, 2018 slide #36: noted DJIA in trading range pattern

Fundamental forces control whether uptrend resumes & new high occurs

Chart of DJIA as of July 20, 2018: now in a sideways pattern

Questions: (1) will 2016-17 uptrend resume? ; (2) when might that happen?

Fundamental market forces will trigger breakout if long-term scenario stays intact

Adapted and annotated graph by Yahoo! Finance

July 25, 2018 Lewis G. Larsen, Copyright 2018 All rights reserved 36

July 25, 2018: slide #38: tax & regulations cuts boost growth

Risks: U.S./China trade war, Fed over-tightens rates, Nov. election results

See Jan. 17, 2018 Larsen PowerPoint for details of models

Economic and technological forces continue to support bullish scenario

Key long-term macroeconomic and technological forces that have driven a 30-year secular uptrend in stock market prices and decline in both interest and inflation rates continue to operate as explained in Larsen qualitative models.

- U.S. had already greatly regained much of its international competitiveness *before* Trump's bold initiatives to slash burdensome regulations and reduce corporate tax rates. Those recent actions further boosted U.S. economic prospects: 4 - 6% GDP growth is now possible. To assess present rate of U.S. economic growth see estimated 2nd quarter 2018 GDP released July 27
- Strong GDP growth of 3% or more in 2nd quarter 2018 estimate may well be a necessary but not totally sufficient condition for a stock price breakout. While excellent GDP growth boosts corporate earnings, market participants might still be quite worried about: (1) earnings and GDP hits from tariff-driven trade wars with China and EU; (2) triggering of U.S. recession by Fed policy error in continuing to increase short-term interest rates (unaware that major reacceleration of U.S. inflation rate is really not a problem); and (3) risk that Republican party could possibly lose control of U.S. House, an event that could lead to Trump's impeachment and removal from office --- this would be quite negative for markets due to reversals of Trump policies

July 25, 2018 38

July 25, 2018: slide #39: sideways DJIA until risks resolved

Market participants fearful Fed might over-tighten and invert yield curve

See Jan. 17, 2018 Larsen PowerPoint for details of models

Long-term economic and technological forces are ameliorating inflation

Sideways market price patterns very often characterize periods during which market participants are assessing likely probabilities for key risk factors. Up or down price breakouts occur once market fundamentals are better clarified

- **Long-running trade wars via imposition of tariffs is a non-trivial risk for future U.S. economic growth and corporate earnings. If and when market participants become convinced that Trump will very probably be able to negotiate fairer trade deals with China and EU and drop newly imposed punitive tariffs, that risk will disappear as impediment to upside breakout. Watch for key signs that trade negotiations may be headed for 'soft landing'**

- **Multiple long-term fundamental economic and technological parameters indicate that U.S. rate of inflation is well under control and very unlikely to exceed key 3 - 5%/year threshold level for any significant period of time. If that holds true, Larsen's long-term macroeconomic scenario will remain intact and long-running secular bull market in U.S. stocks should resume. This further implies that upside breakout of today's sideways price pattern is inevitable; only remaining question is *when* that key event might happen. Caution: breakout could be delayed by lingering worries that U.S. Fed (still planning more interest rate hikes in 2018) might boost rates way too much, invert the yield curve, and then trigger a U.S. recession due to policy error**

July 25, 2018 Lewis G. Larsen, 39

July 25, 2018: slide #40: recession unlikely within 3 - 9 months

New all-time high DJIA close Oct. 3; Republicans lost House Nov. 6, 2018

See Jan. 17, 2018 Larsen PowerPoint for details of models

No obvious economic reasons for U.S. recession during next 3 - 9 months

Markets do *not* always wait to stage breakouts of sideways price patterns until probabilities for fundamental economic and/or political risks are fully resolved. Consequence: one must always be alert for technical breakouts as in Slide #37

- Since the U.S. economy is just beginning to strongly re-accelerate --- and absent any near-term Fed policy errors or totally unexpected, exogenous economic calamities --- there are no compelling economic reasons for it to slide into a recession during the next 3 - 9 months (which would trigger a *downside* price breakout). See how market reacts to further interest rate hikes & additional yield curve flattening or inversion; also watch behavior of Philadelphia Fed's Anxious Index. Although it is not infallible, if Fed's Index 'flashes red' one should evaluate total market exposure and closely monitor new economic data for any confirmation that a recession may be imminent
- Absent obvious onset of U.S. recession and/or all-out China/EU trade war with no hope for negotiating better trade agreements, watch carefully for classic technical breakout event similar to what is illustrated on Slide #37. Given U.S. GDP ≥ 3%, upside breakout from sideways price pattern would receive additional impetus from any successful resolution of present vexing U.S. trade issues with China and/or EU. However, breakout may not occur until and unless Fall election results eliminate risk for Trump's impeachment

July 25, 2018 40

July 25, 2018: slide #41: long-term Larsen scenario is intact

Upside DJIA breakout likely within 3 - 6 months; occurred on Oct. 3, 2018

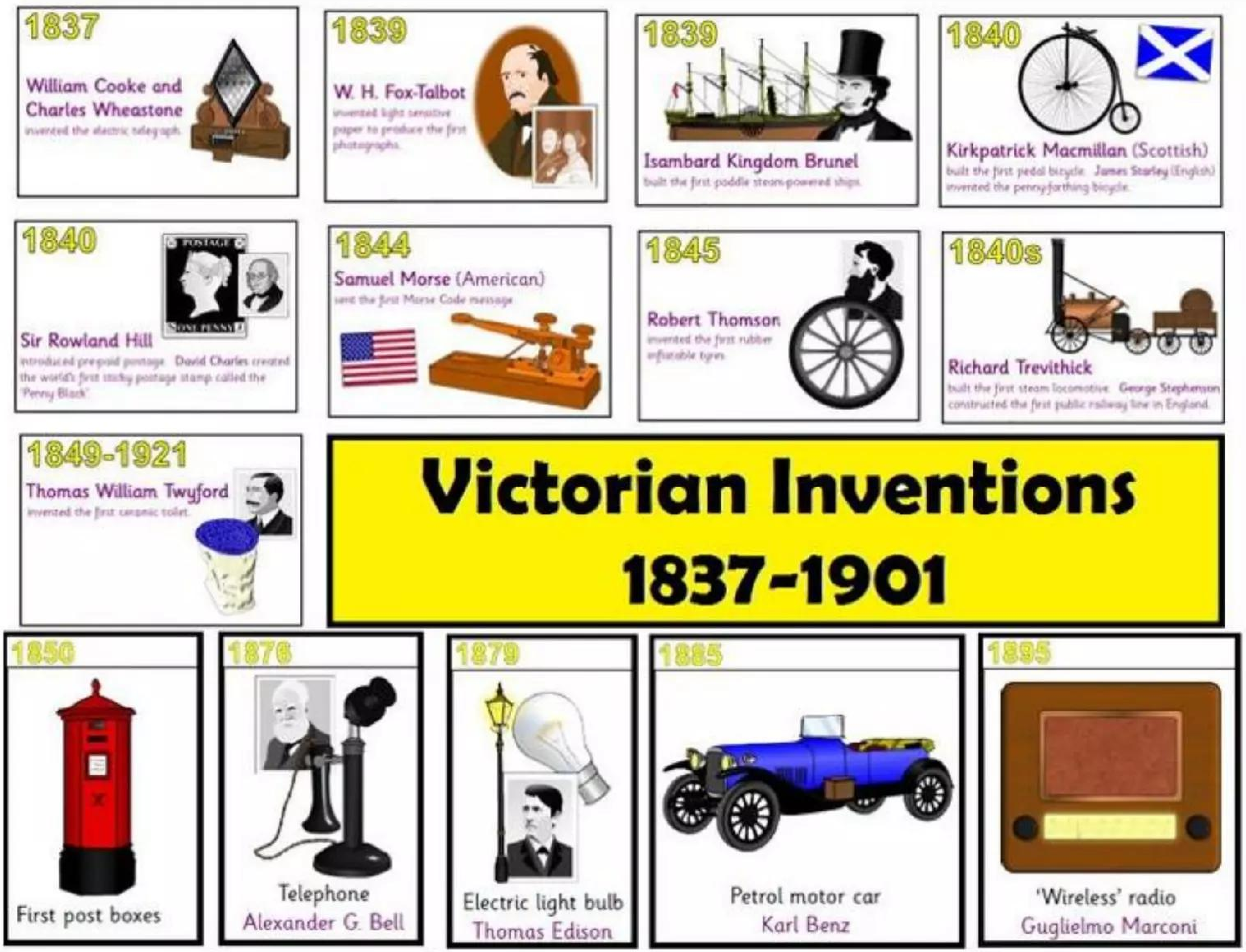
See Jan. 17, 2018 Larsen PowerPoint for details of models

Upside price breakout of DJIA is likely to occur within next 3 - 6 months

- Recent bellicose communications between U.S. and Iranian leaders have raised specter of hostilities between U.S. and Iran leading to possibility of Iran blocking transit of oil tankers through Strait of Hormuz. If this event occurred, and depending on duration of shipping interruption, spot crude oil price would skyrocket and oil markets would drastically invert. Similar cataclysm that occurred during 1973-74 Arab oil embargo helped trigger a global "stagflation" recession that lasted from 1973-75. Situation of U.S. and global economy are different today: world EI is much-reduced from levels prevalent in 1970s and oil price increases have much lesser impact on current rates of inflation (see lower chart on Slide #21). Unlike 1970s, there is now substantial capacity for manufacturing hybrid or all-electric vehicles. Today, consumers could very rapidly switch from vehicles being powered by gasoline or diesel fuel to electricity if economics are favorable
- Conclusion: long-term macroeconomic scenario outlined in Jan 17, 2018 PowerPoint remains intact. Consequence: long-term secular uptrend in U.S. stock prices is still underway. Given that inflation rate remains < 3 - 5% and long-term interest rates appear to be in ~ steady-state at relatively low levels, and barring any serious Fed policy errors and near-term recession, upside price breakout of DJIA is likely to occur within the next 3 - 6 months

July 25, 2018 41

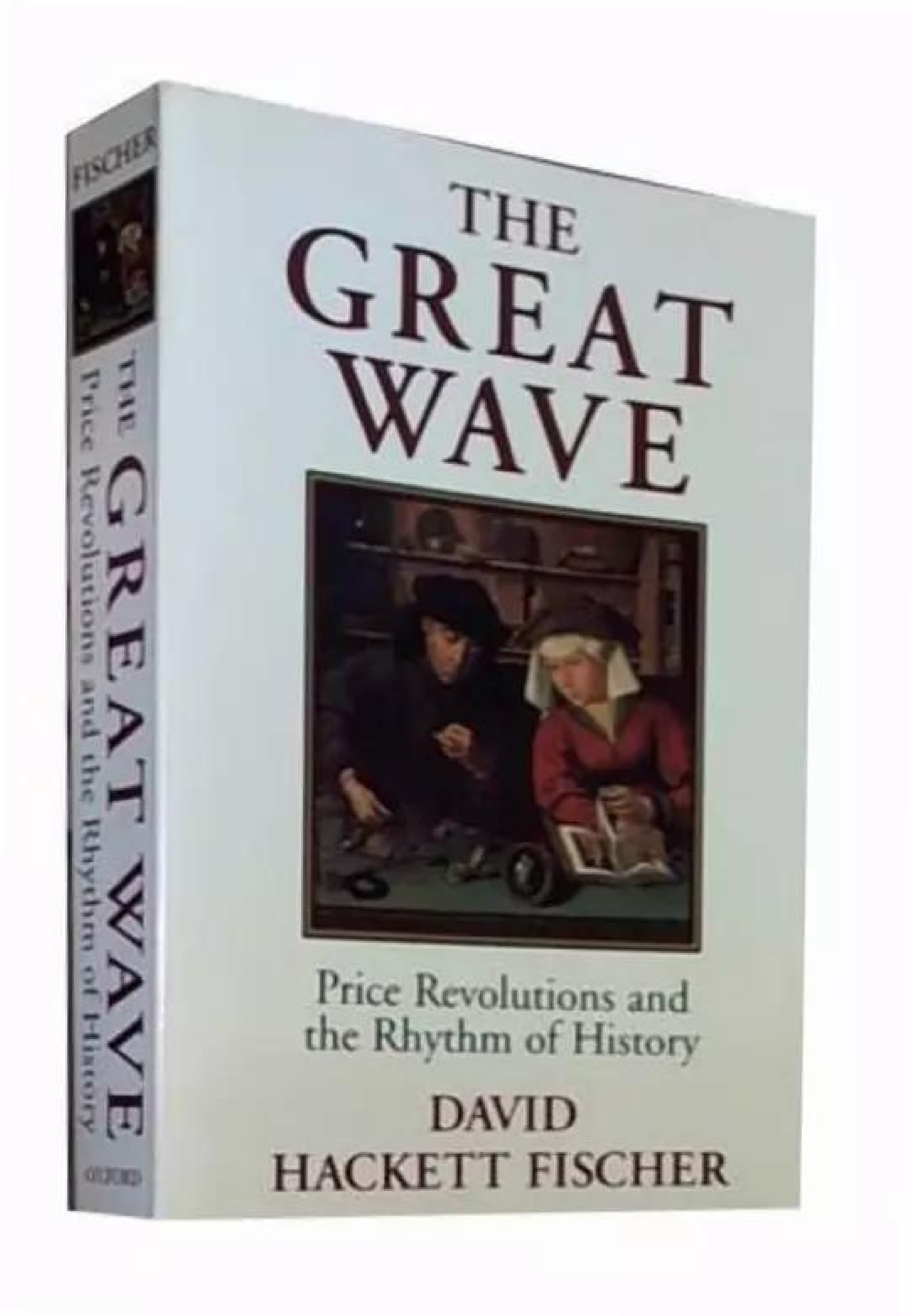
Technology advances: key driver

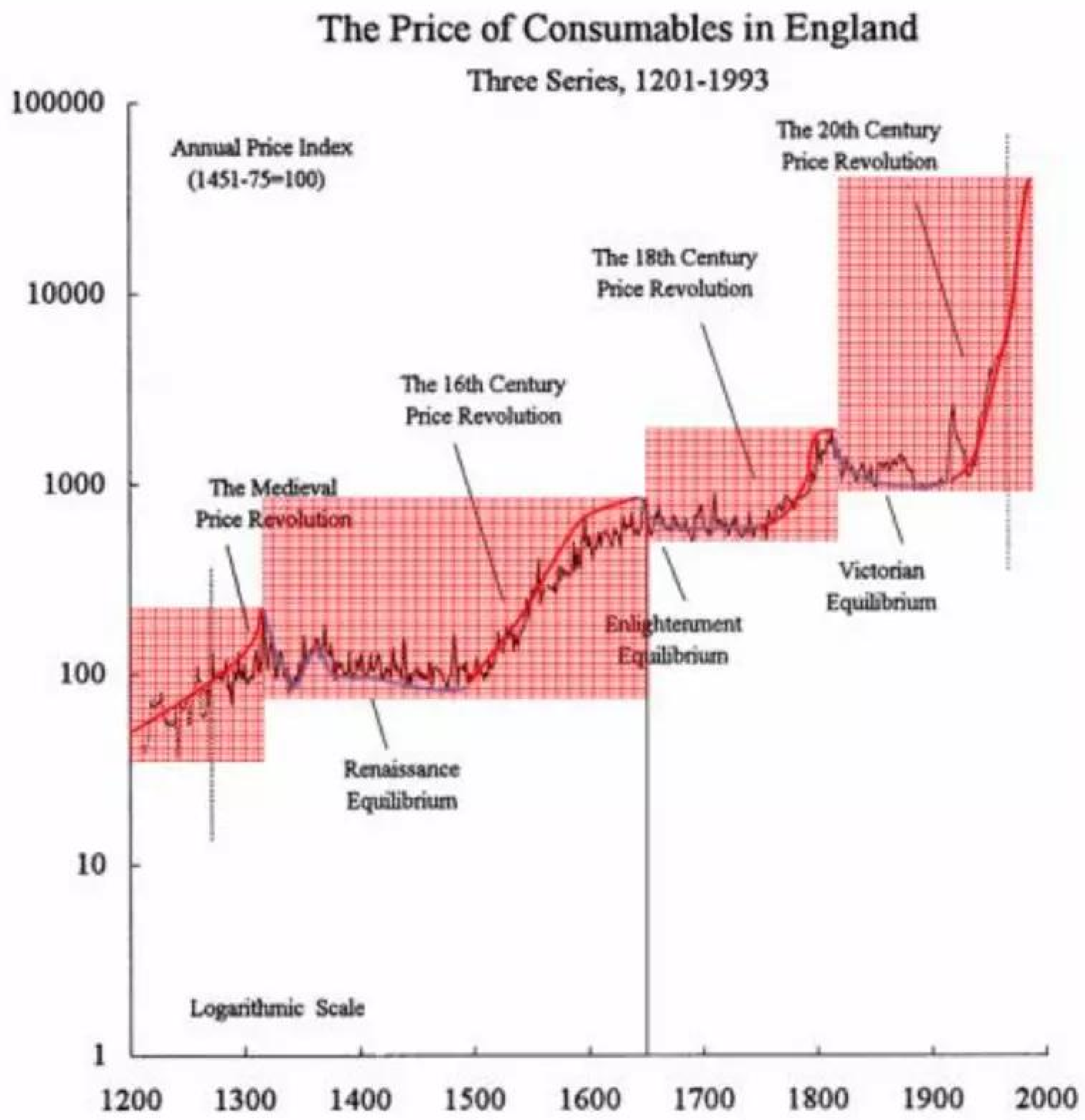


"The Great Wave: Price Revolutions and the Rhythm of History"

Detailed discussion of Prof. Fischer's ideas in Jan. 17, 2018 PowerPoint

"We found evidence of four price revolutions since the twelfth century: four very long waves of rising prices, punctuated by long periods of comparative price equilibrium. This is not a cyclical pattern. Price revolutions have no fixed and regular periodicity. Some were as short as eighty years; others as long as 180 years. They differed in duration, velocity, magnitude, and momentum."





https://www.amazon.com/Great-Wave-Revolutions-Rhythm-History/dp/019512121X

New ~85-year Fischer Period of Equilibrium began in 1979-80

Low interest rates and inflation accompany large technological advances

Both Prof. Fischer and Larsen presently believe that fifth 21st century low-inflation Period of Equilibrium probably began in approximately 1979 -1980

- In 2002, Fischer stated publicly, "We've come to a major break in price systems. I think we can say it probably started in the 1990s. So we are now nearly a decade into a new era [Period of Equilibrium]" (quoted from Peter Hartcher's paper published in *Australian Financial Review* pp. 25 Feb. 1, 2002)
- In 1997, Larsen helped complete Fischer's Great Wave model: with his added hypothesis that innovation bursts and commercialization of new technologies are key driving forces that help create and maintain periods of equilibrium
- Duration of Period of Equilibrium phase in each of Fischer's four Great Waves ranged from 60 - 100 years (avg. 85). It was typified by relatively low interest rates and low inflation. Business cycles are very apparent; can be greatly affected by technology-driven disruptions that sometimes trigger depressions
- Recent data strongly suggests that the world population growth rate appears to be slowing down and perhaps even flattening-out. If such apparent trends in this data are confirmed, the 21st century would be the first Period of Equilibrium in over 800 years during which world population growth was *decelerating* instead of accelerating. If this transpires, it would probably dampen growing inflationary pressures that terminated all previous equilibria

Today's myriad of new technologies resembles Victorian era

See a detailed discussion on Slides #30 - 45 in Jan. 17, 2018 PowerPoint

Inventions 1800-1900

- Steamship, 1807
- Telegraph 1837
- Automobile 1884
- Bicycle 1885
- Camera (film) 1888
- Dynamite 1866
- Dynamo 1871
- Elevator, 1852
- Electric Iron 1882
- Electric Motor 1837
- Phonograph 1877
- Typewriter 1867
- Welding 1877
- Sewing Machine 1846
- Light Bulb 1879
- Telephone 1876
- Blast Furnace 1856
- Electric Stove 1896

Lecture #19 - HNRT 228 "Energy and the Environment" adapted from Univ. of Wisconsin (Green Bay) and George Mason Univ. Engineering (Lakshmanan)

https://slideplayer.com/slide/10090453/

Also see "Scientific inventions – 1800s to 1900s":

https://scientific-inventions.weebly.com/timeline.html

Patents are directly related to rates of technological progress

Enormous acceleration in annual number of patents granted since ~1980

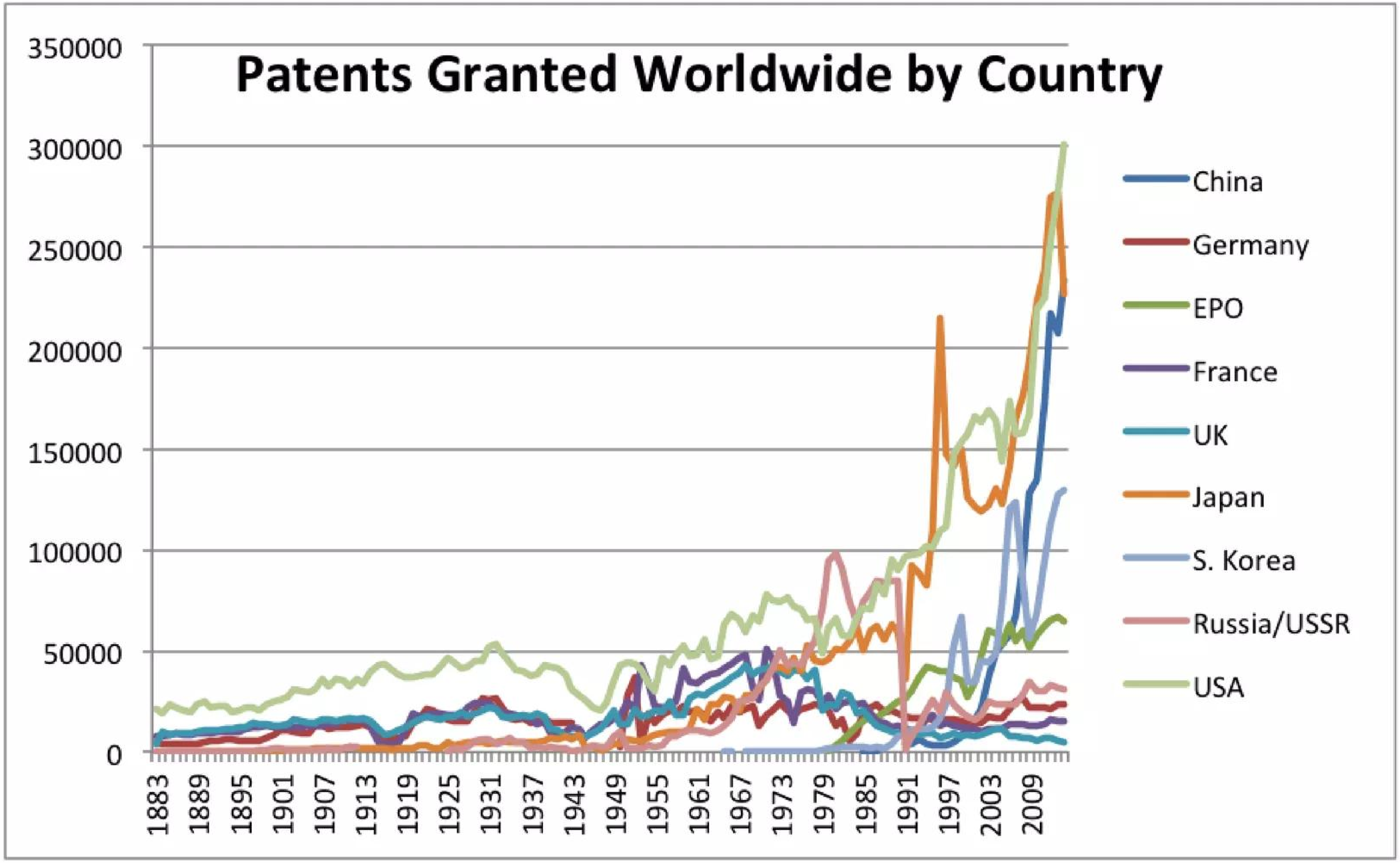


Chart credit: Eric Gastfriend

https://futureoflife.org/2015/11/05/90-of-all-the-scientists-that-ever-lived-are-alive-today/

Improvements in computing technologies boost GDP growth

Reduces costs, improves productivity, and enables artificial intelligence

AI IMPACTS Trends in the cost of computing

2015-03-10 AI Timelines, Featured Articles, Hardware and AI Timelines

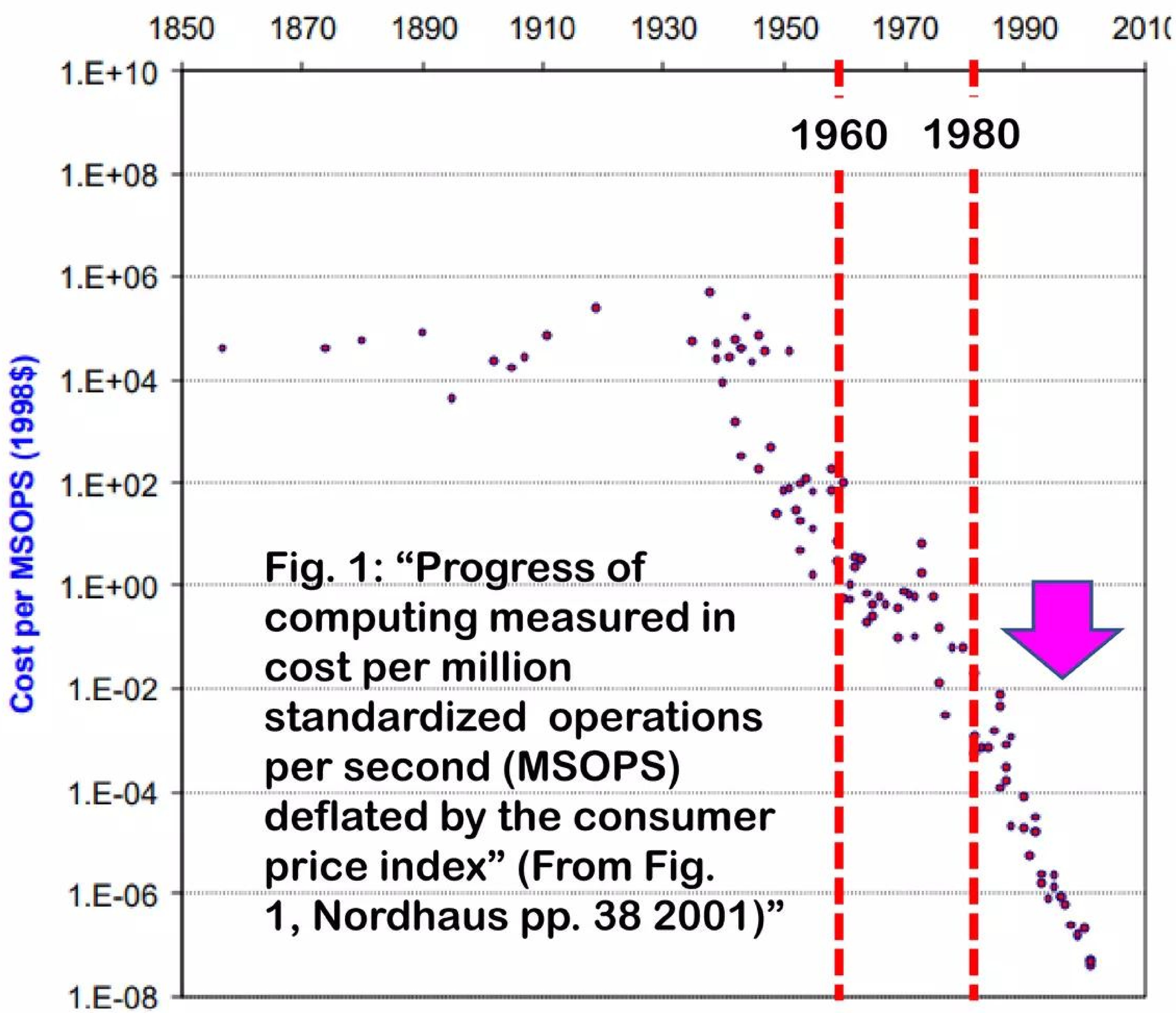


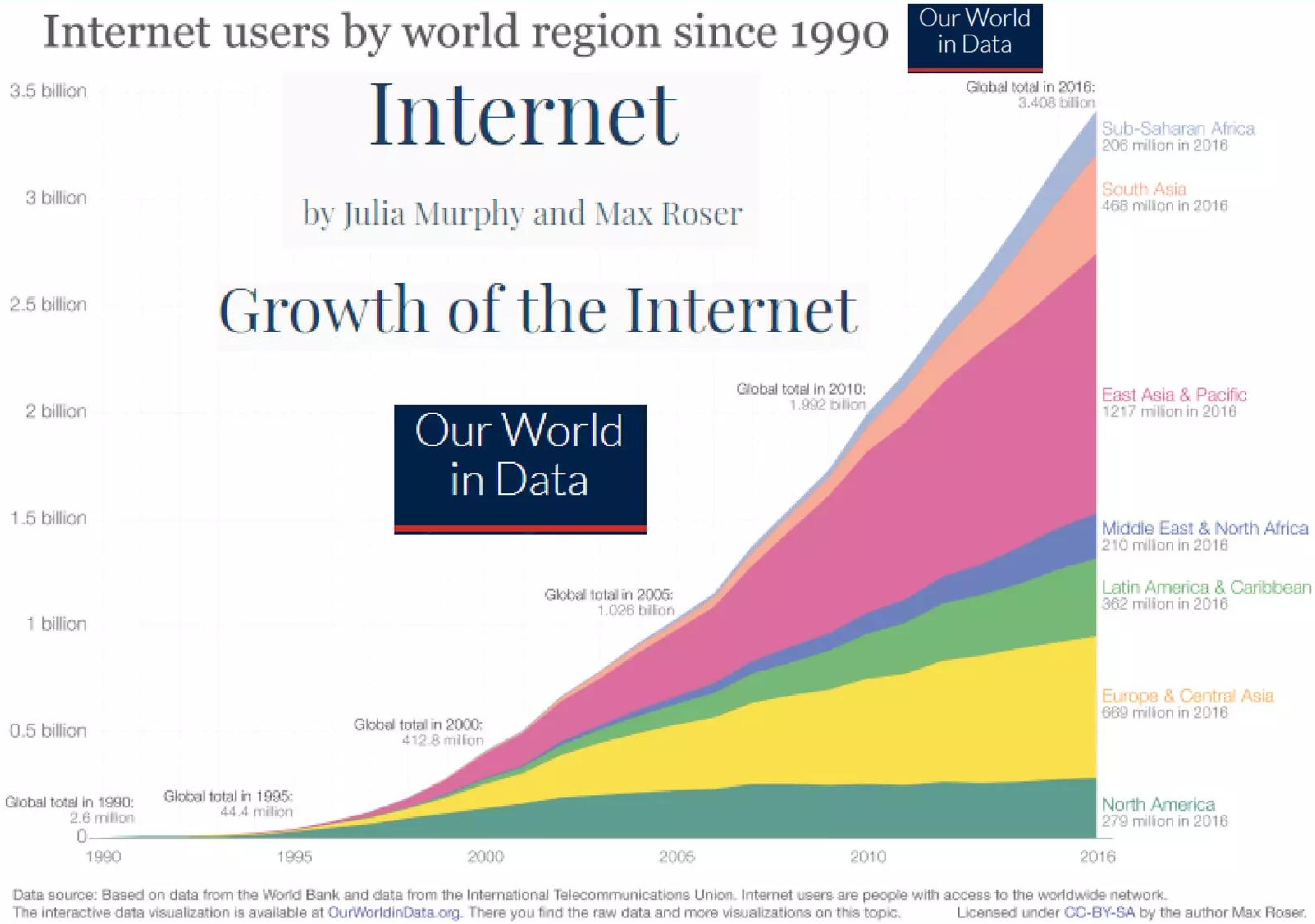
Fig. 1: "Progress of computing measured in cost per million standardized operations per second (MSOPS) deflated by the consumer price index" (From Fig. 1, Nordhaus pp. 38 2001)"

"Nordhaus (2001) analyzes cost of computing over past century and a half, and produces Figure 1. He calculates that performance improved at an average rate of 55% per year since 1940. That is, an order of magnitude roughly every five years. However, he finds that average growth rate in different decades differed markedly, with growth since 1980 (until writing in 2001) at around 80% per year, and growth in the 60s and 70s at less than 30%."

https://aiimpacts.org/trends-in-the-cost-of-computing/

Internet users went from 2.6 million (1990) to 3.4 billion (2016)

TCP-IP revolutionized low-cost global information access & E-commerce



https://ourworldindata.org/internet

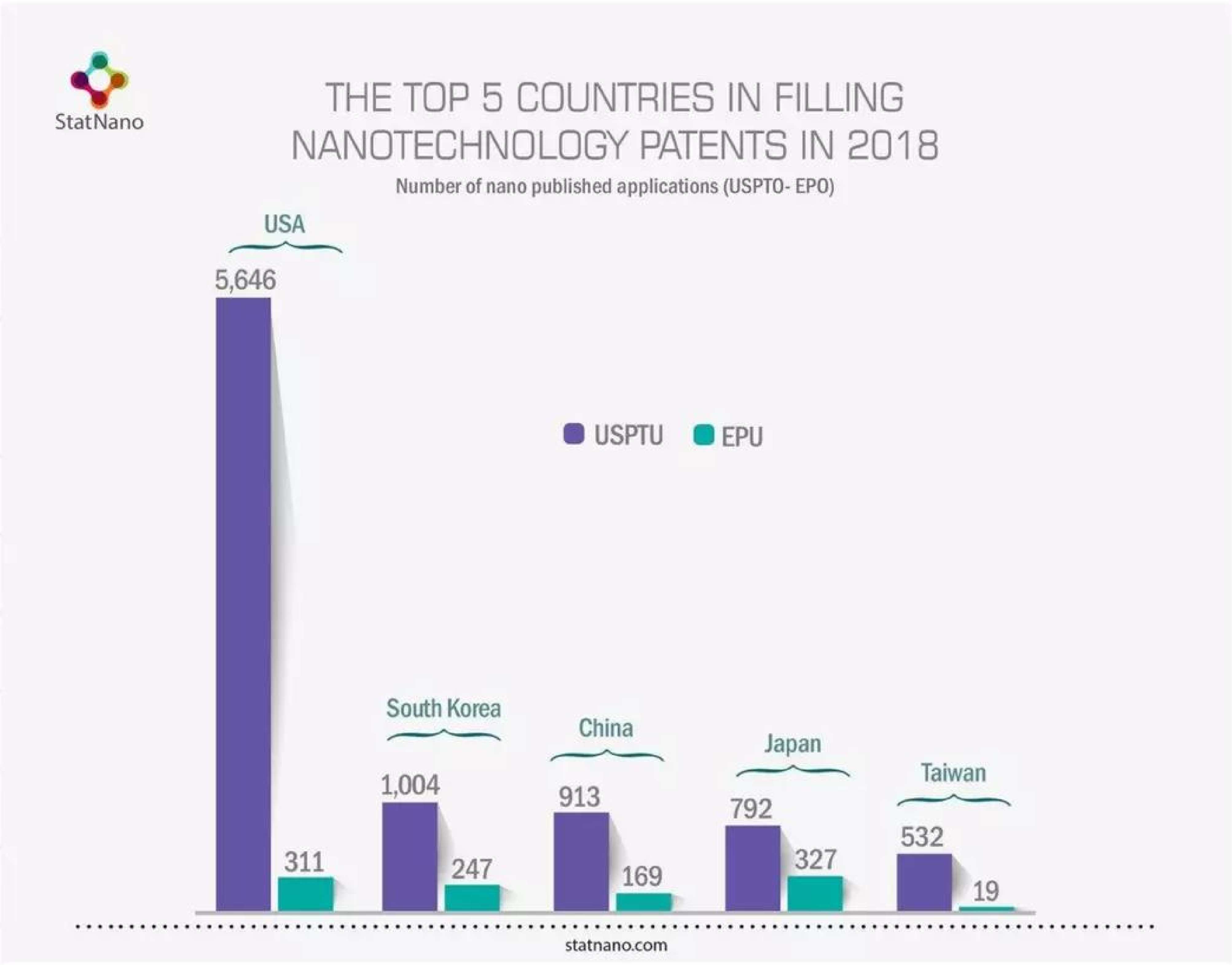
Rankings for nanotech patenting activities in 2017 and 2018

U.S. has by far the largest number of new patents filed in nanotechnology

2017

Rank	Country	Published patent applications in USPTO	Published patent applications in EPO
1	USA	5559	310
2	South Korea	1254	246
3	Japan	766	235
4	China	694	159
5	Taiwan	516	23
6	Germany	433	159
7	France	280	102
8	UK	226	36
9	Canada	171	15
10	Saudi Arabia	153	6

2018



StatNano

https://statnano.com/news/62082

Distribution of nanotech education & knowledge: 2017 - 2018

Nanotech didn't exist before 1980; enabled by many advances in science

Fig. 1. The distribution of the top 100 universities ranked in order of their Shanghai Global Ranking in Nanoscience & Nanotechnology 2018.

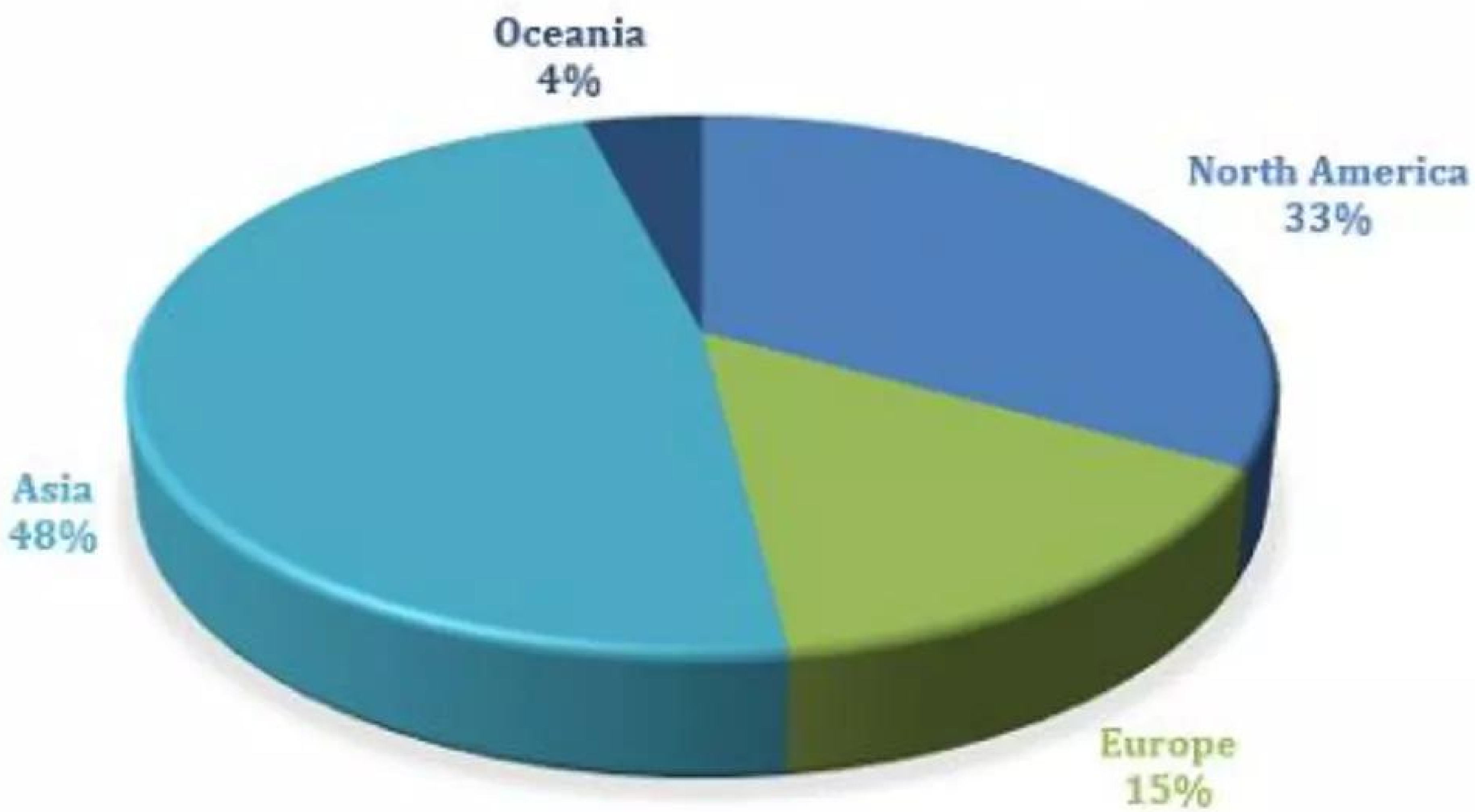
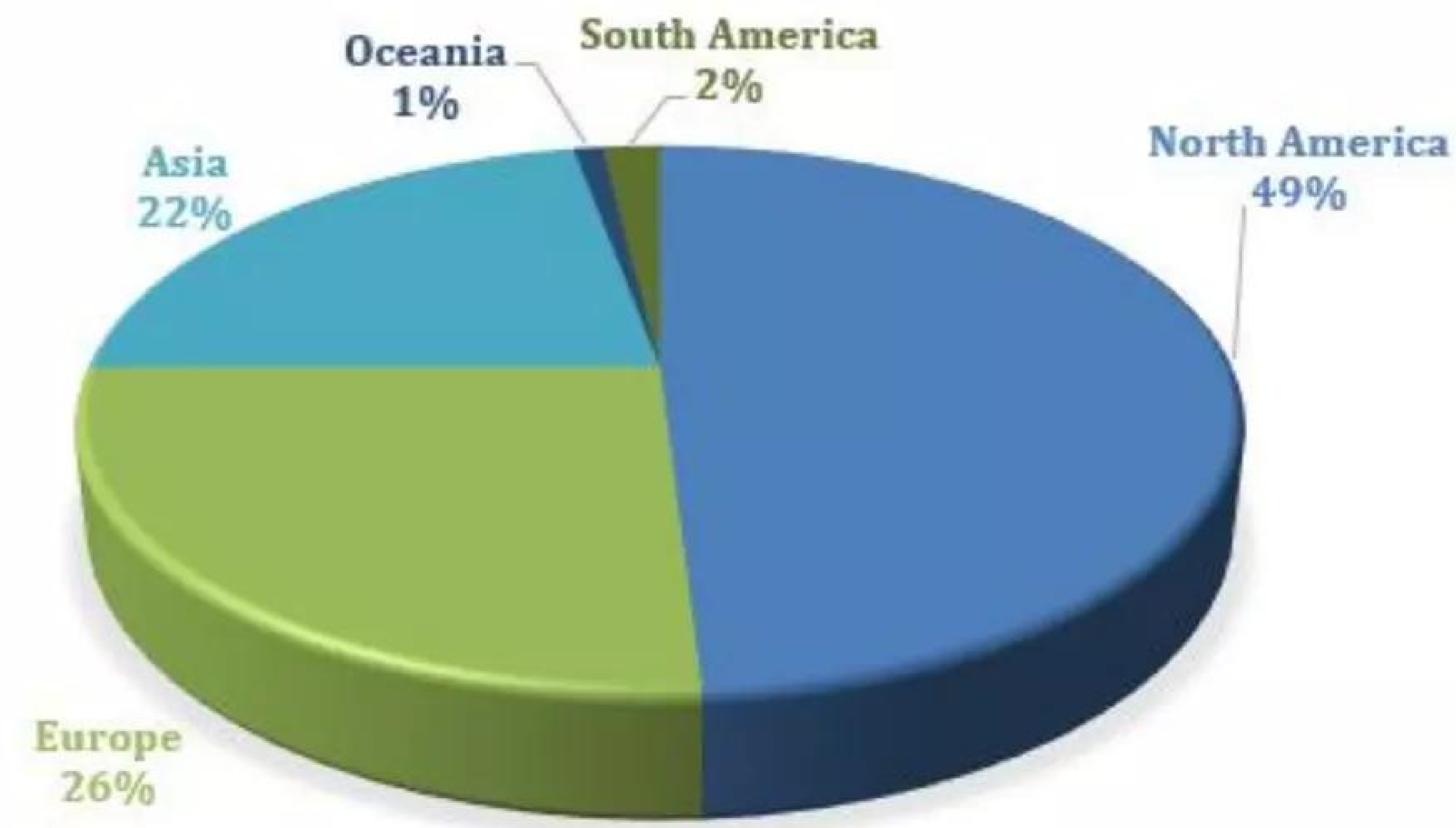


Fig. 2. "The distribution of the top 100 nanotechnology and nanoscience experts considering their Google Scholar public profiles until November 2017"



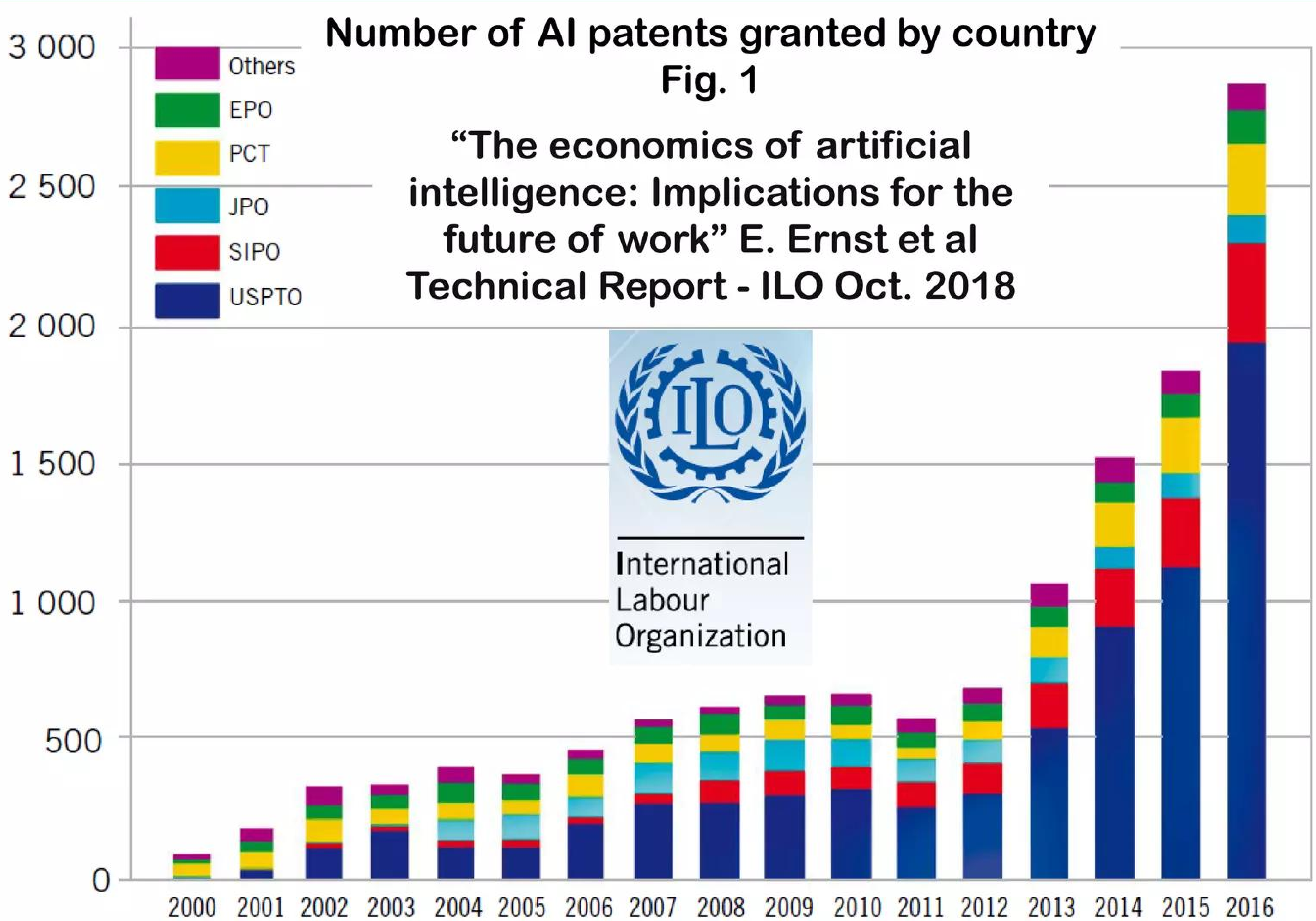
"It can be seen that although North America and Europe respectively hold 33% and 15% of the top universities, they interestingly own 49% and 26% of the leading experts. On the contrary, Asia having 48% of these pioneering universities has just 22% of the top 100 nanotechnology experts."

StatNano

https://statnano.com/news/62082

Artificial intelligence patents granted by country: 2000 - 2016

Today's AI didn't exist before 2000; enabled by lower costs of computing



https://www.researchgate.net/publication/328353684_The_economics_of_artificial_intelligence_Implications_for_the_future_of_work

Example: use of robots increased plant productivity by 250%

Changying Precision Technology Company located near Shenzhen, China

IEEE SPECTRUM

"Chinese unmanned factory replaces 600 humans with 60 robots"
Evan Ackerman *IEEE Spectrum* Aug. 15, 2015

Selected quotes from *IEEE Spectrum* article:

- "Changying Precision Technology Company … has replaced some 600 human assembly line workers with 60 robots, resulting in a fivefold reduction in manufacturing errors and an increase in production of over 250 percent."
- "Other robots in this factory, which manufactures 'cell phone modules,' according to the article, include 'unmanned transport trucks' and some unspecified automated warehouse equipment. The introduction of the robots reportedly improved production capacity from 8,000 modules per person per month to 21,000, and the defect rate has dropped from over 25 percent (!) to under 5 percent."
- "Apparently, there are still some human workers in the factory, but most don't perform any actual assembly line task: the 'technical staff just sits at the computer and monitors through a central control system'."

https://spectrum.ieee.org/automaton/robotics/industrial-robots/chinese-unmanned-factory-replaces-humans-with-robots

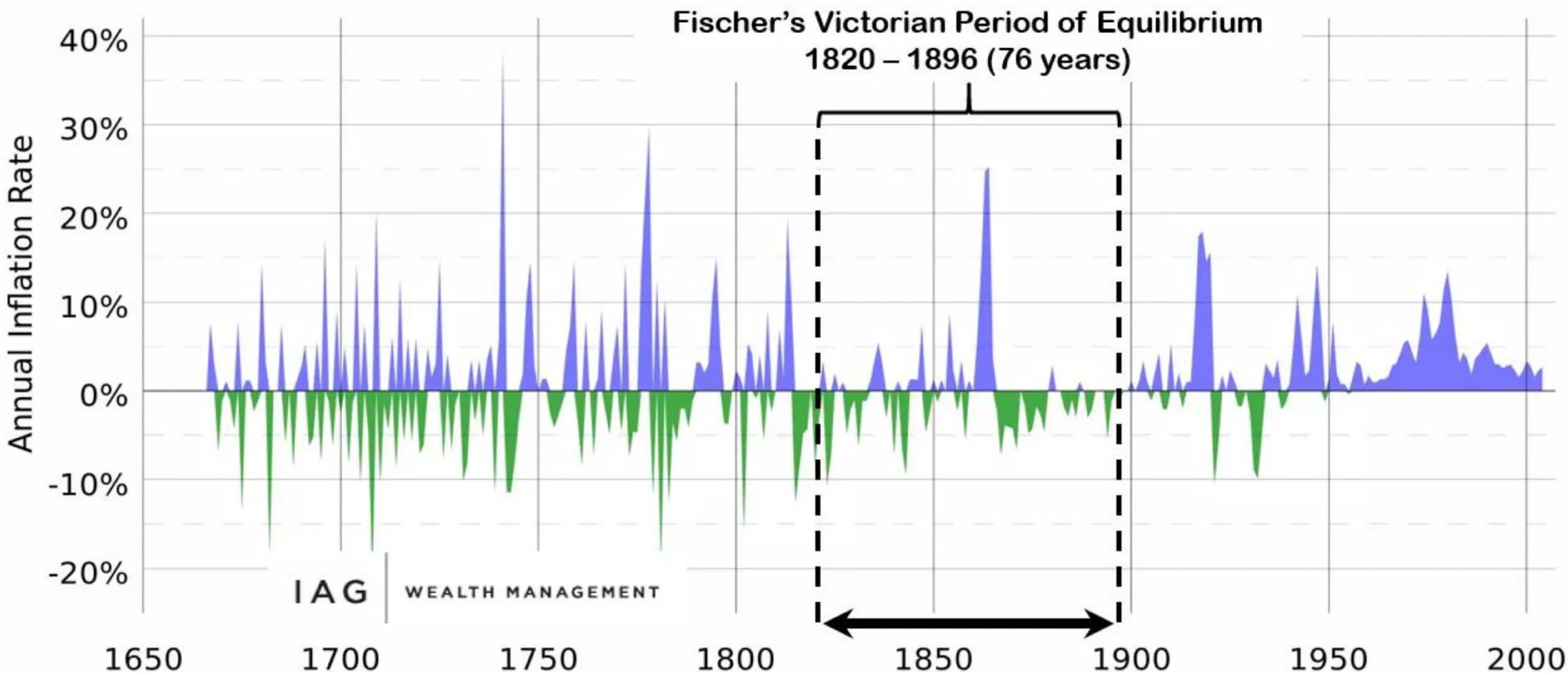
Key macro and market variables

Current Period of Equilibrium resembles that of Victorian era

Burst of disruptive technological innovation & invention from 1820 - 1896

Except for Civil War, U.S. experienced mostly low inflation; episodes of deflation

U.S. historical inflation rate



Wholesale prices mostly stable worldwide from 1820 - 1896

Episodic, relatively short-lived bouts of inflation caused by various wars

Fig. 3.19 "The Great Wave" David Hackett Fischer pp. 159

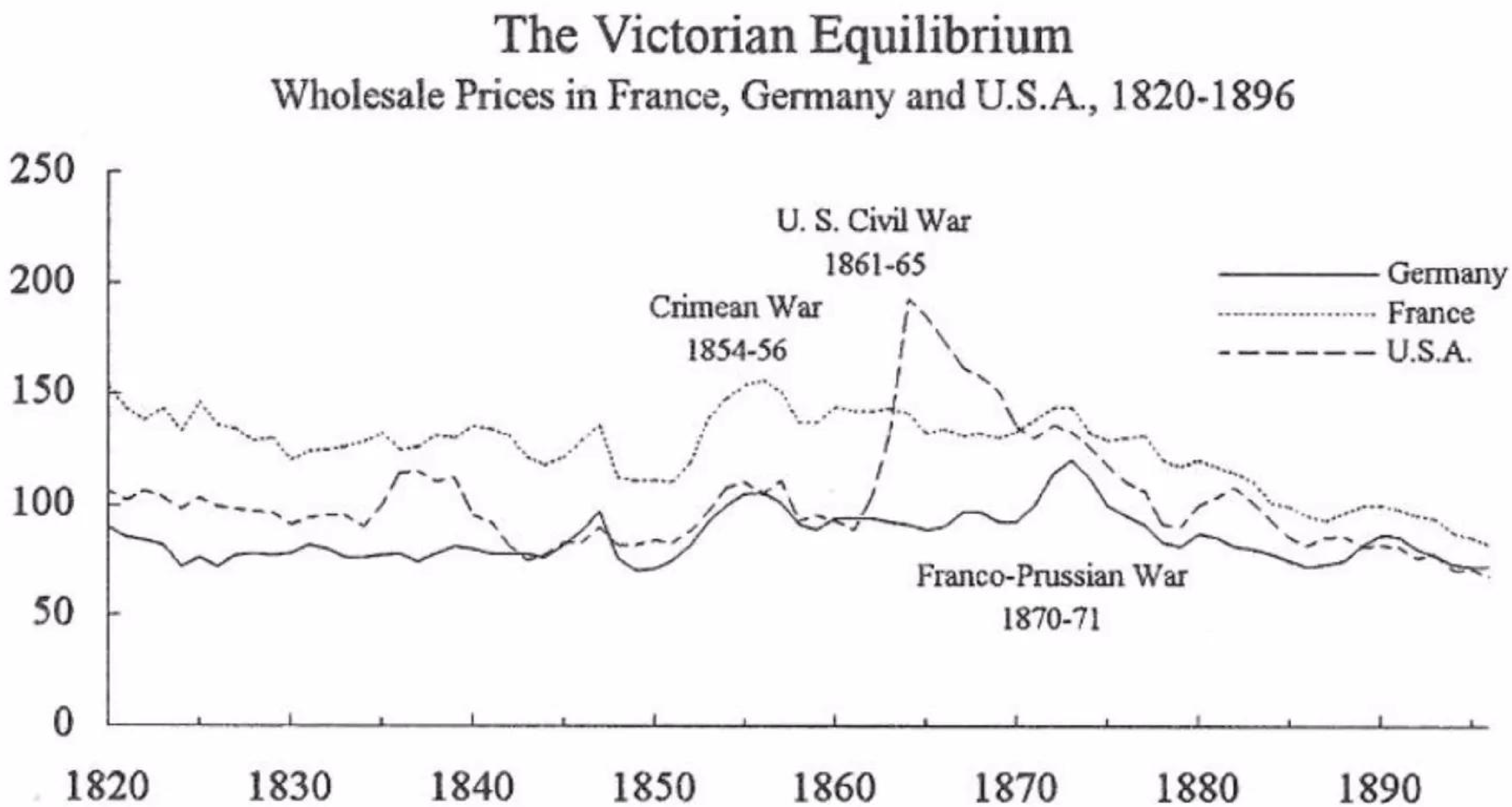
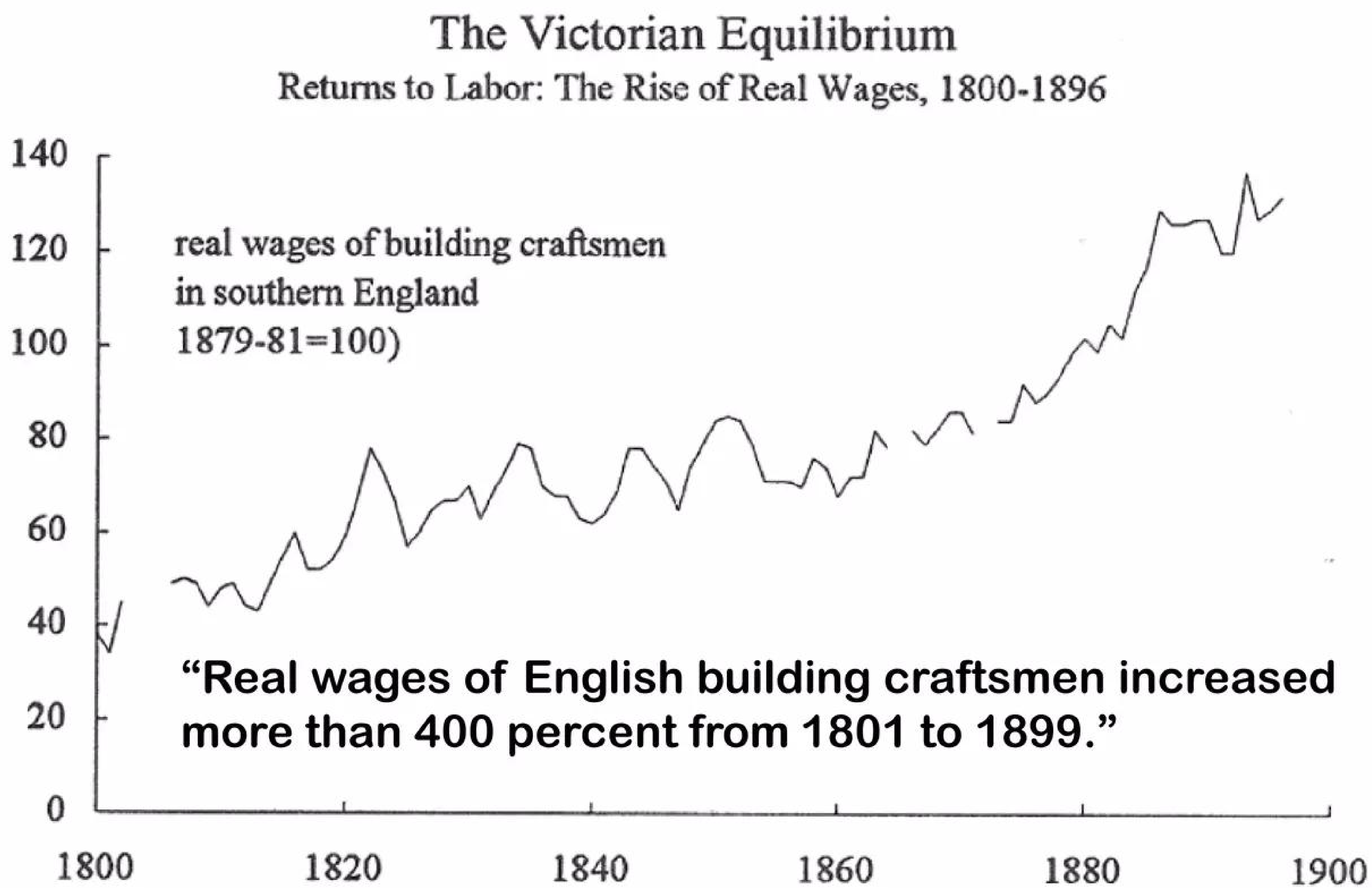


Fig. 3.19 "Surveys wholesale prices in Germany (1913 = 100), France (1901 – 100), and the U.S.A. (1910-14=100). Pattern was similar in all three nations: stable or declining prices from 1820 to 1896, punctuated by short surges of inflation (mostly war-related) that disrupted the prevailing equilibrium only for a few years."

Victorian Period of Equilibrium had big increase in real wages

Didn't cause wage-price inflation spiral because of boosted productivity

Fig. 3.20 "The Great Wave" David Hackett Fischer pp. 160



"Real wages of English building craftsmen increased more than 400 percent from 1801 to 1899."

Fig. 3.20 "Reports evidence of a sustained rise in real wages, which for British builders trebled during the nineteenth century."

pp. 159: "… real wages rose buoyantly – as in other Periods of Equilibrium … Both money wages and real wages increased in Britain, France, Germany, Sweden, and every other European nation where data has come to hand."

Prices remained ~ stable despite sharply rising real wages

Boosting worker productivity enabled real wage gains with little inflation

Fig. 3.18 "The Great Wave" David Hackett Fischer pp. 158

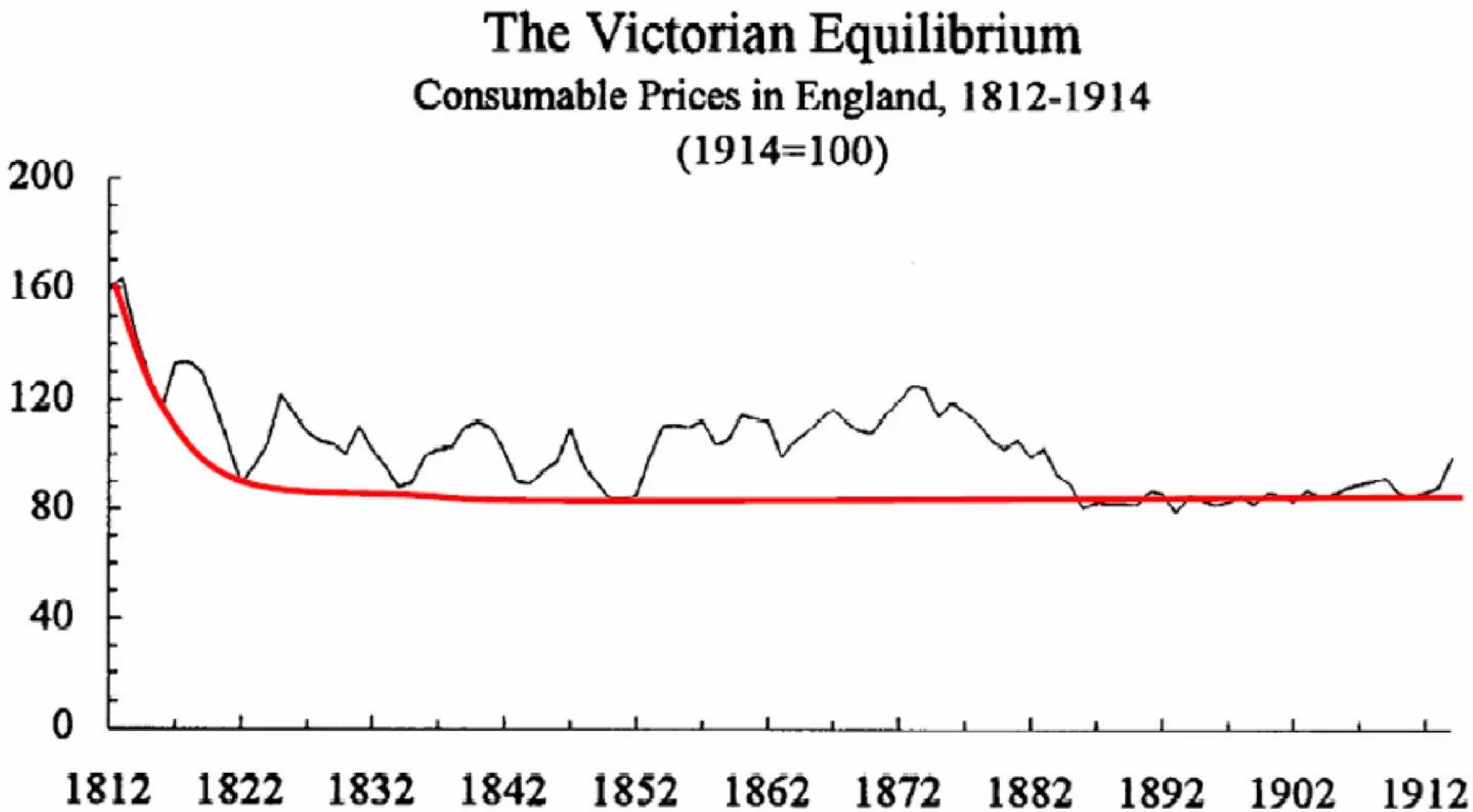


Fig. 3.18 "Traces movement of consumable prices in England from 1812 to 1914. Period of falling prices (1812-22) came after crisis of previous price revolution. This deflation was followed by fluctuations on a fixed plane (1822-73), then by a second sharp deflation (1873-82), and yet another period of stability."

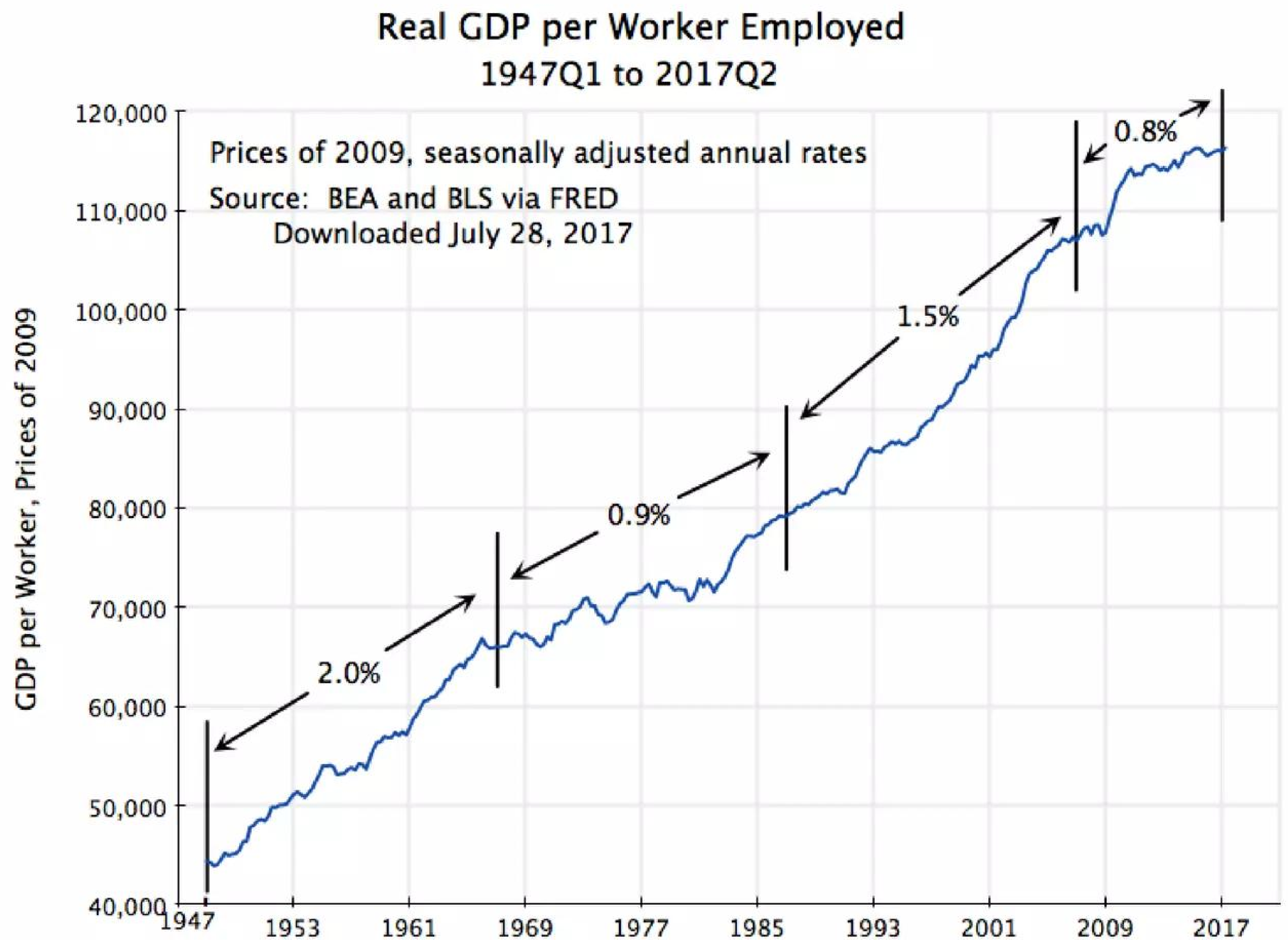
Real GDP per hour worked is another measure of productivity

Measure has slowed since 1947; should begin to increase in next 5 years

An Economic Sense
It's the Economy, Stupid!

Blog of Dr. Frank J. Lysy Economist

Posted on August 1, 2017



https://aneconomicsense.org/category/econ-data/gdp-productivity/

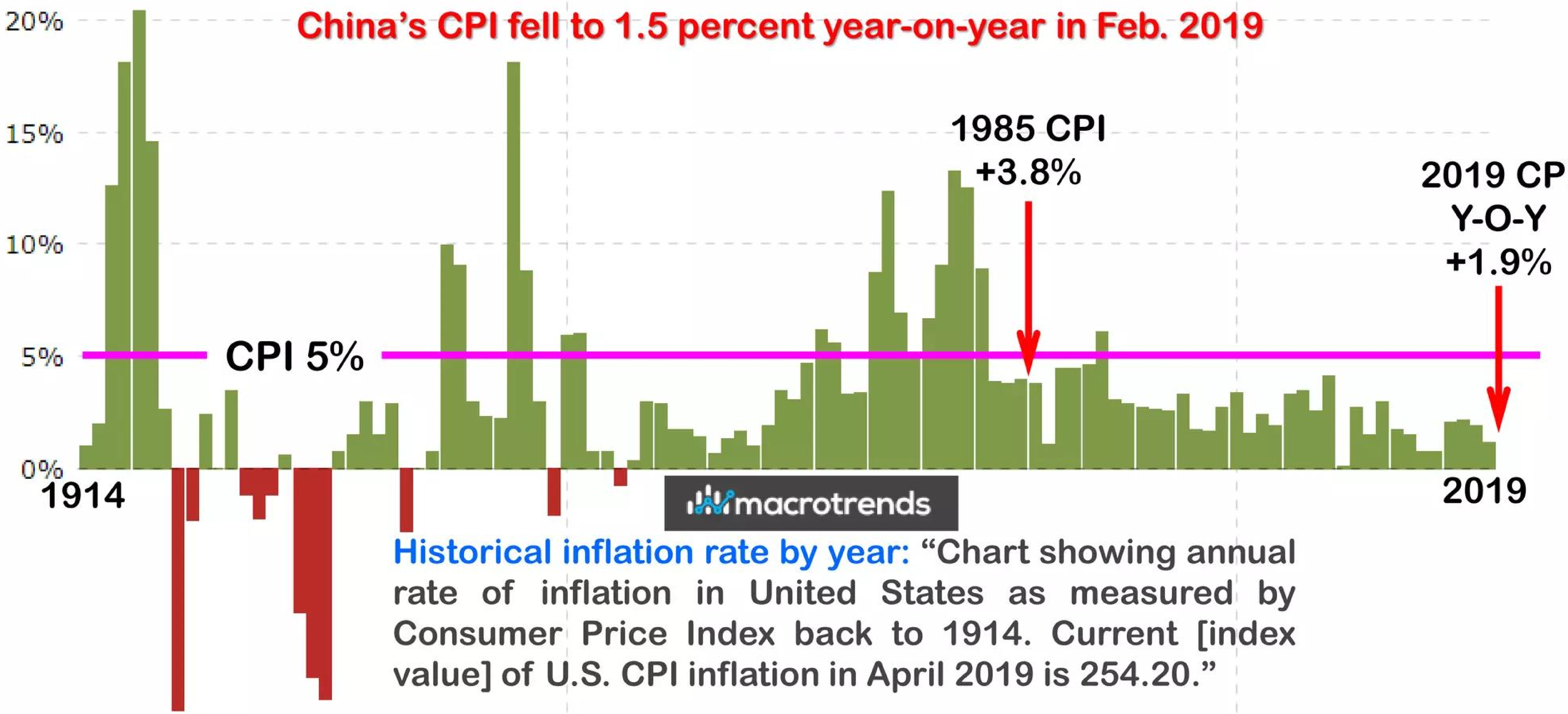
Present U.S. CPI inflation rate remains low vs. past 50 years

As of April 2019 there are no signs that CPI inflation rate is reaccelerating

CONSUMER PRICE INDEX – MARCH 2019

The Consumer Price Index for All Urban Consumers (CPI-U) increased 0.4 percent in March on a seasonally adjusted basis after rising 0.2 percent in February, the U.S. Bureau of Labor Statistics reported today. Over the last 12 months, the all items index increased 1.9 percent before seasonal adjustment.

BUREAU OF LABOR STATISTICS



Historical inflation rate by year: "Chart showing annual rate of inflation in United States as measured by Consumer Price Index back to 1914. Current [index value] of U.S. CPI inflation in April 2019 is 254.20."

Long decline in 30-year U.S. Treasury bond yields since 1980

Secular decline has ended: now in trading range band from ~2% to 3.5%

30 Year Treasury Rate - 39 Year Historical Chart

Interactive chart showing the daily 30 year treasury yield back to 1977. The U.S Treasury suspended issuance of the 30 year bond between 2/15/2002 and 2/9/2006. The current 30 year treasury yield as of April 10, 2019 is **2.90%**.

China's 30-year government bond yield was 3.86% on April 12, 2019

Long decline in 3-month U.S. Treasury bill yields since 1980

Secular decline in yield has ended: 3-mo presently trading at about 2.40%

3-month Treasury Bill: secondary market rate

China's 3-month government bond yield was 2.11 % on April 4, 2019

Broad index of commodity prices now ~ stable within a range

CRB Index from 2011 to 2019: 5 years of deflation followed by ~ stability

MarketWatch

Thomson Reuters/CoreCommodity CRB Index

Daily OHLC 2009 through April 9, 2019 Last: 188.4967

https://www.marketwatch.com/investing/index/crb/charts?countrycode=xx

Gold price behavior does not suggest reaccelerating inflation

Price movements since 2011 roughly paralleled those of broad CRB index

Present unemployment rate is quite low in historical terms

Some economists worry about wage-price inflation spiral *a la* 1960s - 70s

npr WBEZ91.5 CHICAGO'S npr NEWS STATION

U.S. Unemployment Rate Drops To 3.7 Percent, Lowest In Nearly 50 Years

AVIE SCHNEIDER October 5, 2018 · 8:35 AM ET

PITTSBURGH BUSINESS TIMES

Pittsburgh region hits lowest unemployment rate in almost 50 years

By Luke Torrance – Digital Producer, Pittsburgh Business Times

Mar 14, 2019, 1:14pm EDT

Burlington Free Press

Vermont unemployment fell to lowest rate ever in January; business owners say it's 'too low'

Dan D'Ambrosio, Burlington Free Press Published 6:30 a.m. ET March 15, 2019

THE HILL

Trump Fed nominee touts economy: 'Lowest unemployment rate now since the Beatles'

BY JOHN BOWDEN - 04/07/19 07:01 AM EDT

Jobless claims hit 50-year low due to strong job market — and stricter unemployment rules

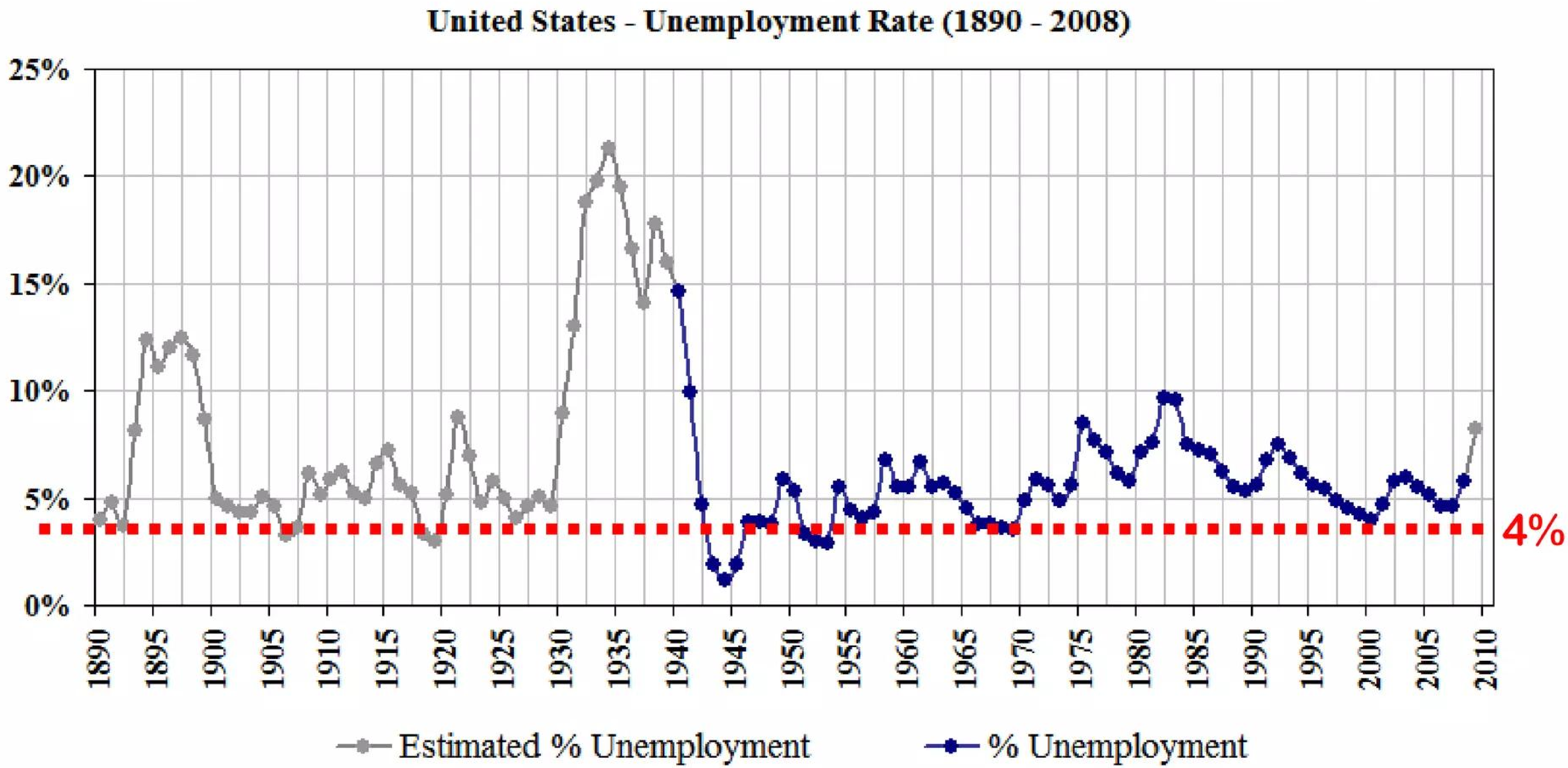
By Christopher Rugaber APRIL 11, 2019, 3:25 PM | WASHINGTON AP

Associated Press

Historical time series: U.S. unemployment rate 1890 - 2008

Unemployment rate of 3.8% in March 2019 is low by historical standards

Present unemployment rate in China is 5.3% as of February 2019

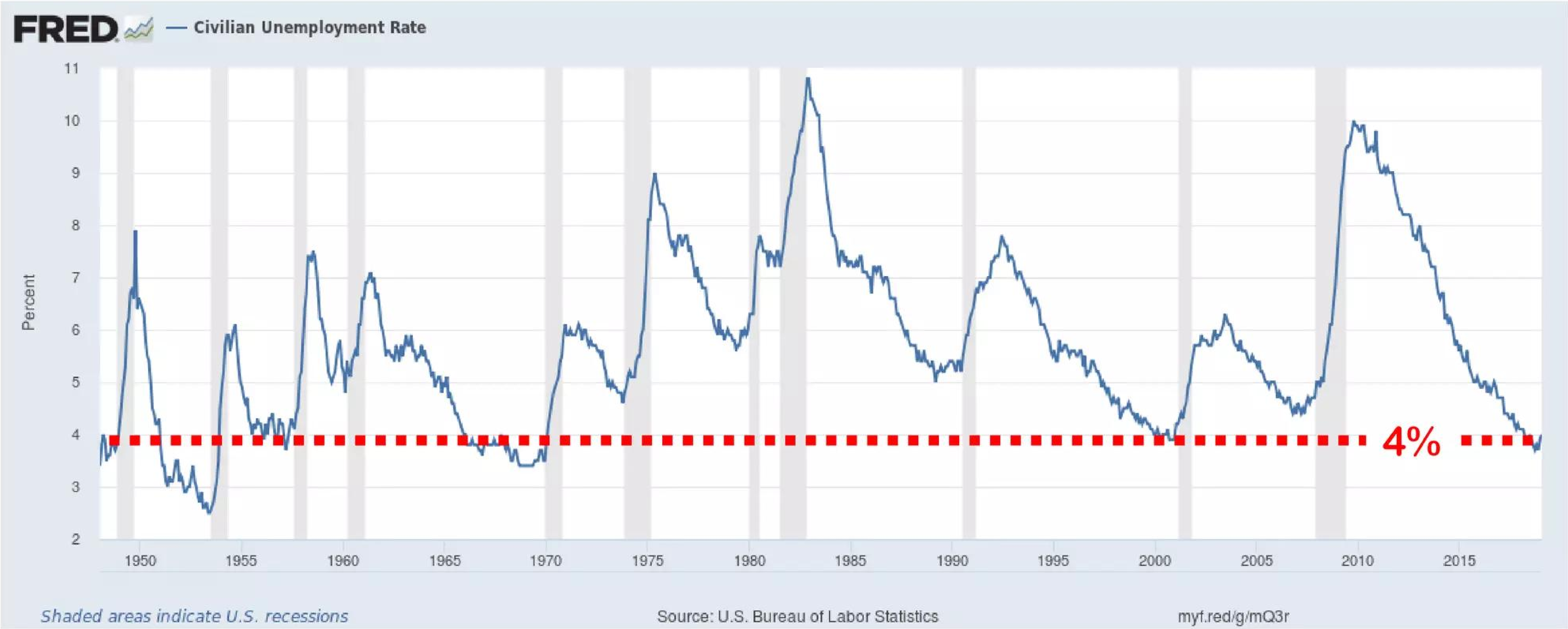


Source: Wikipedia; author Peace1234 (Creative Commons License)

https://en.wikipedia.org/wiki/File:US_Unemployment_1890-2008.gif

Historical time series: U.S. unemployment rate 1947 - 2019

With unemployment very low real wages of workers are finally increasing



"U.S. national unemployment rate was at 3.8 percent through March 2019. Approximately 196,000 jobs were created in March 2019, and the national unemployment rate remained at 3.8 percent, according to the Bureau of Labor Statistics."

U.S. real wage growth has been increasing slowly since 1981

Happening because productivity increasing modestly faster than inflation

"By comparison with the previous three business cycles, inflation-adjusted wage growth since 2007 has been relatively strong. It is slightly ahead of the growth seen during the 1990s or 2000s business cycles and is notably higher than growth in the 1980s."

THE HAMILTON PROJECT
BROOKINGS

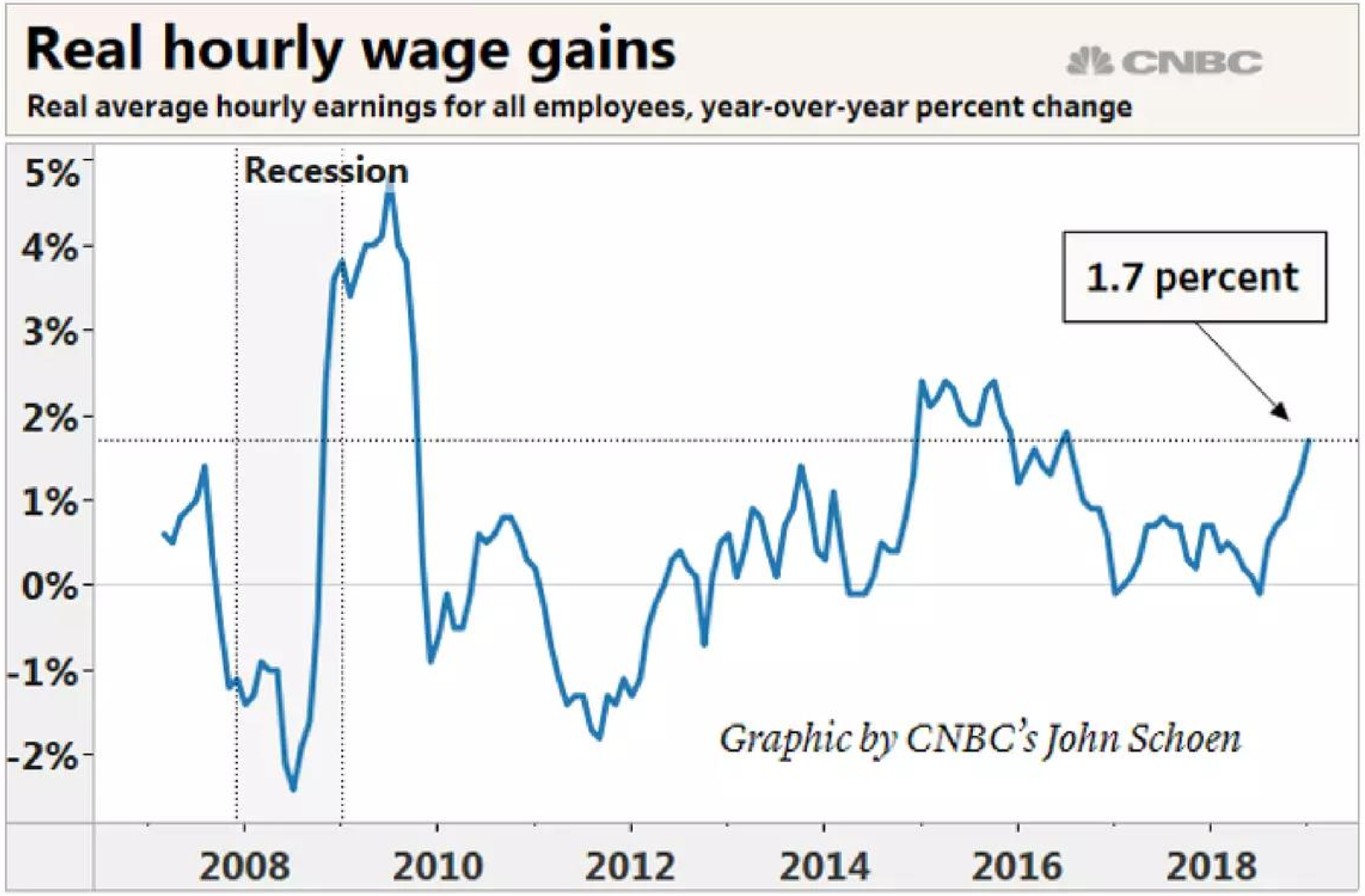
http://www.hamiltonproject.org/charts/real_wage_growth_is_higher_than_in_previous_business_cycles

Real wages increased by 1.7% year-over-year in January 2019

Improved real wage growth consistent with Fischer Period of Equilibrium

Worker wage gains are keeping up with inflation, and then some

CNBC | Jeff Cox @JEFFCOXCNBCCOM | WED, FEB 13 2019 • 2:49 PM EST



SOURCE: BLS

https://www.cnbc.com/2019/02/13/worker-wage-gains-are-keeping-up-with-inflation-and-then-some.html

Multifactor productivity fairly difficult to measure accurately

Important new technologies' productivity impact can be hard to quantify

View

The Real Problem With Productivity Is Measuring It

By Zachary Karabell
May 22, 2017, 9:26 AM CDT

Bloomberg Opinion

The impact of a Google or Waze isn't factored into productivity data. It should be.

"When it comes to productivity, only two things are undebatable: that the official rate of U.S. productivity growth has stalled since at least 2007, having started to slow before then, and that there is no consensus about why or what to do about it. There is, additionally, some broad consensus that without stronger productivity growth going forward, standards of living for the vast majority of Americans will not improve appreciably, which is likely to fuel the current wave of populist discontent."

"One explanation, however, is increasingly popular even as it faces considerable skepticism among economists and policymakers: that the problem is less about productivity than about our inability to measure the effect of the digital and now data revolution that has redefined the American economy. In short, there is a growing chasm between what our economic system is and what our numbers are capable of measuring."

https://www.bloomberg.com/opinion/articles/2017-05-22/the-problem-with-productivity-is-measuring-it

U.S. multifactor productivity grew at rate of 1.0% during 2018

Is this just an outlier or sign of faster growth? Need to monitor it closely

ECONOMY | U.S. ECONOMY

Measure of U.S. Innovation Jumped in 2018

Multifactor productivity grew 1% last year, the strongest gain since 2010

By Josh Mitchell
March 20, 2019 5:43 p.m. E

THE WALL STREET JOURNAL.

"The iPhone, Amazon, and Uber have yet to deliver the kind of productivity boom that led to a burst of American prosperity in previous eras of technological advances. But new data suggest the latest technology boom is starting to give the economy a jolt."

"Multifactor productivity grew 1% last year, the strongest gain since 2010, the first full year of the expansion, the Labor Department said Wednesday."

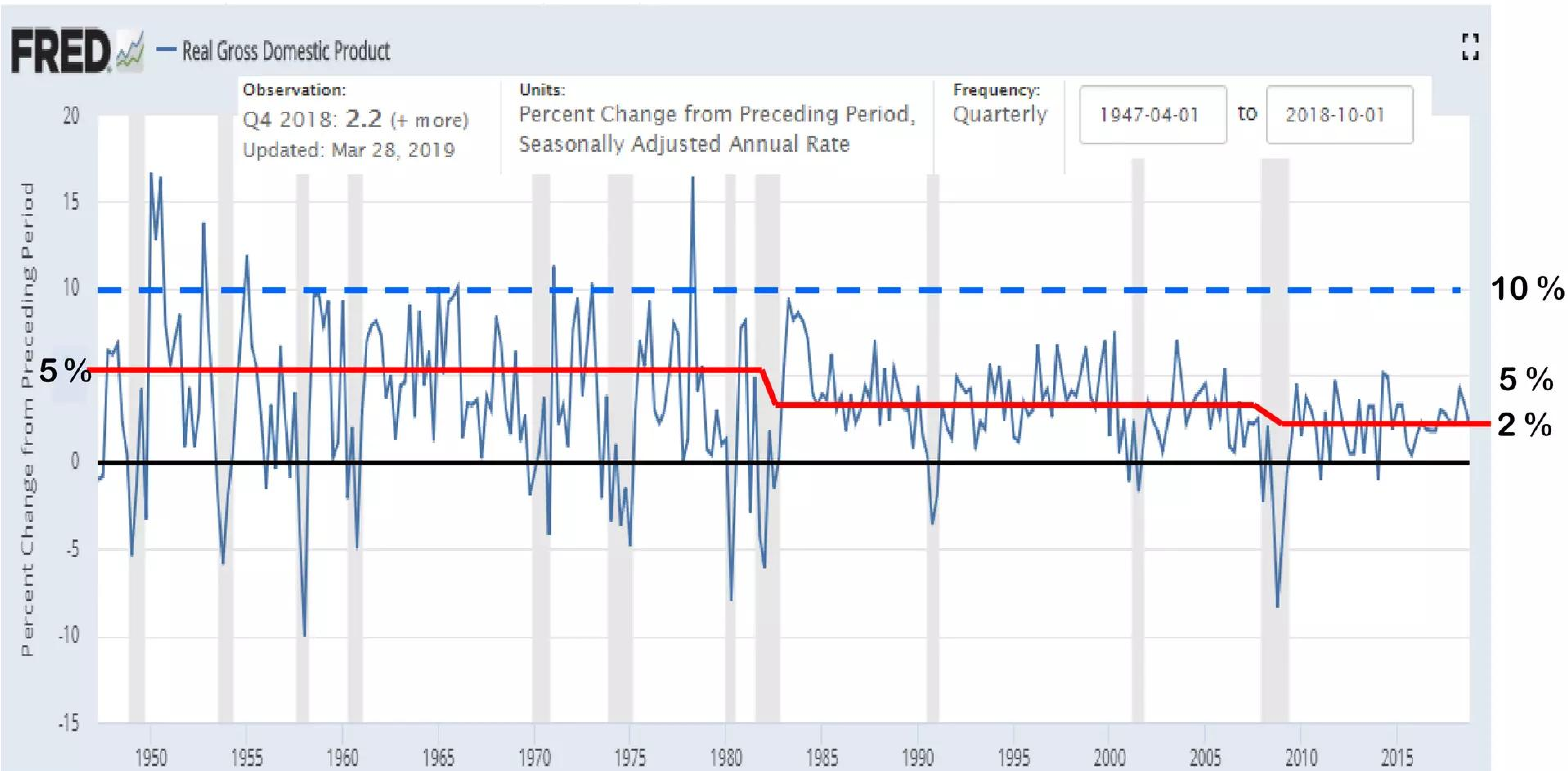
https://www.wsj.com/articles/measure-of-u-s-innovation-jumped-in-2018-11553118223

U.S. quarterly real GDP from April 1947 through October 2018

Average GDP growth has declined since 1947; return to 4 - 6% is possible

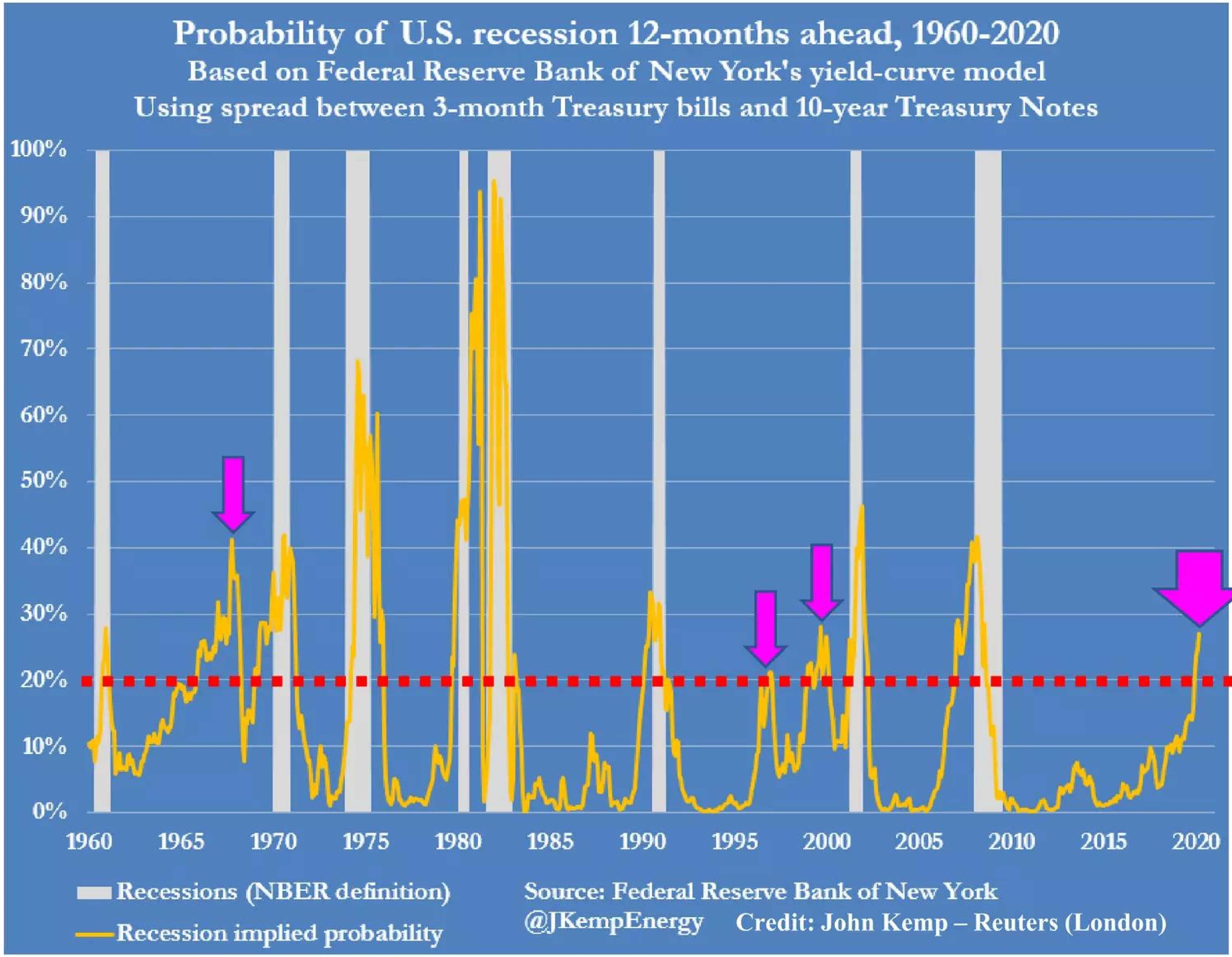
U.S. real gross domestic product, annualized % rate from preceding period

China's annual real GDP presently running at around 6%



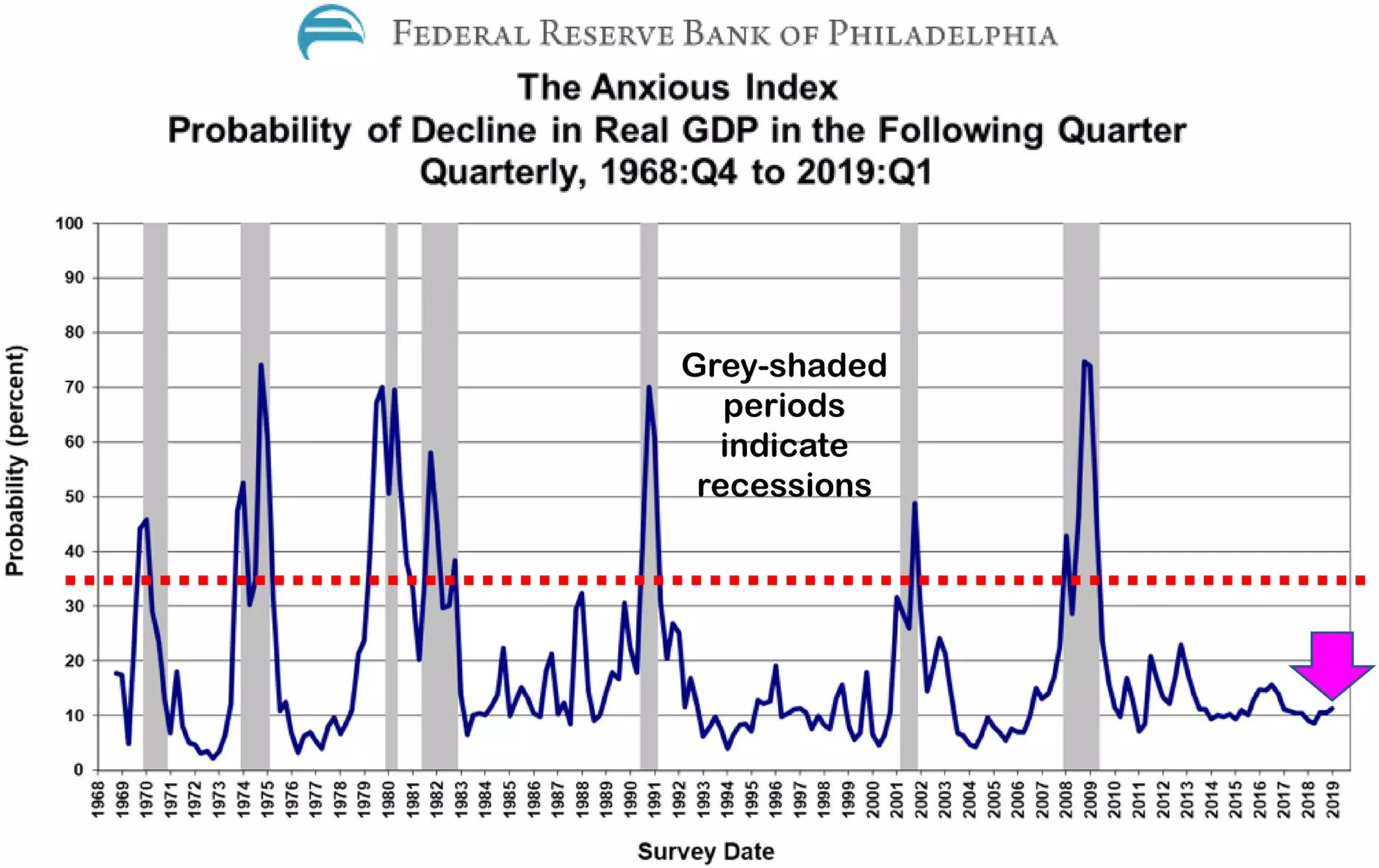
Model estimates U.S. recession probability 12-months ahead

If probability > 20% model had *three false-positive predictions* since 1960



2019:Q1 Anxious Index value does NOT indicate a recession

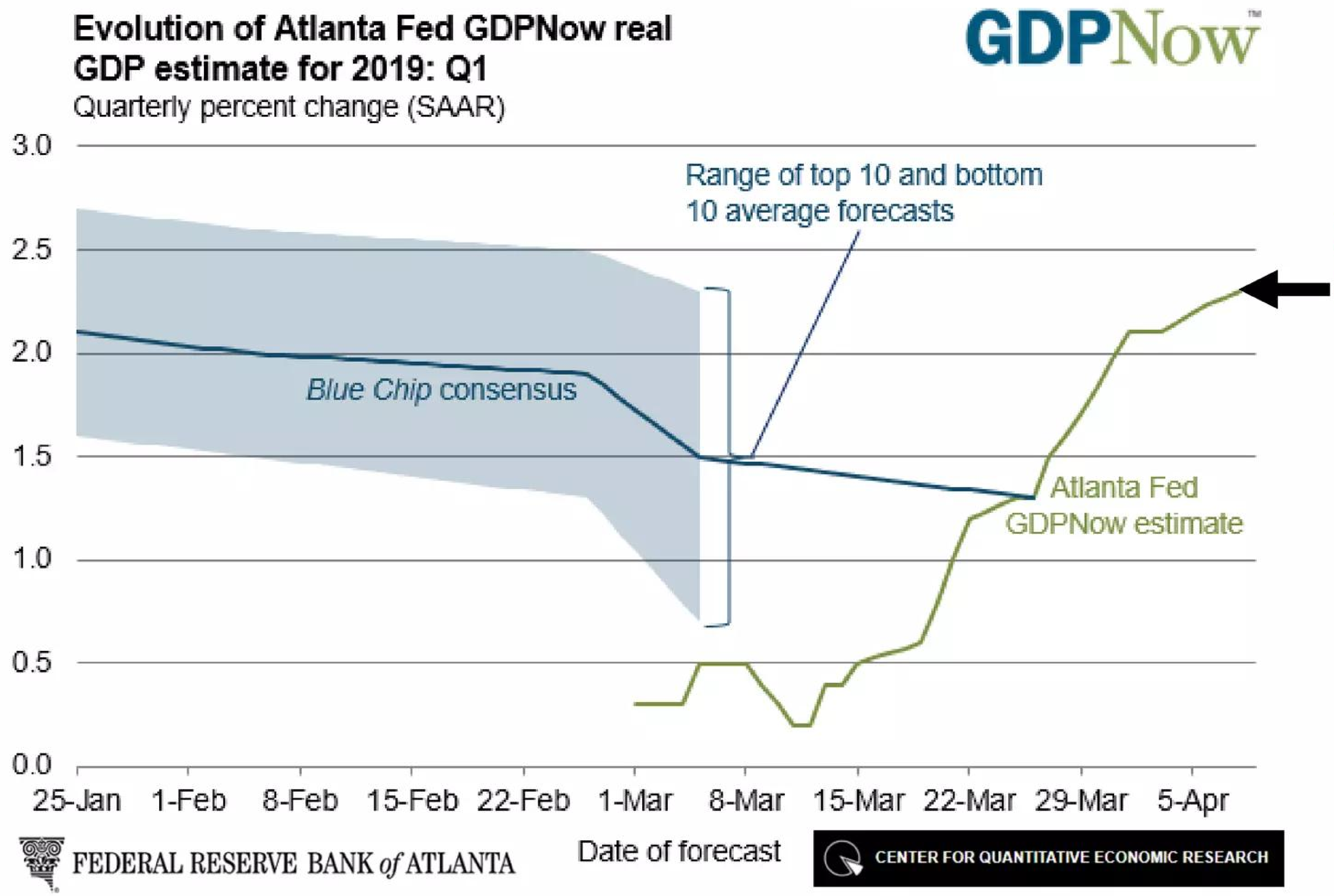
If probability > 35% index correctly predicted *every* recession since 1968



April 8, 2019: GDPNow's Q1 U.S. real GDP forecast is 2.3%

Although U.S. economy has slowed model still predicting positive growth

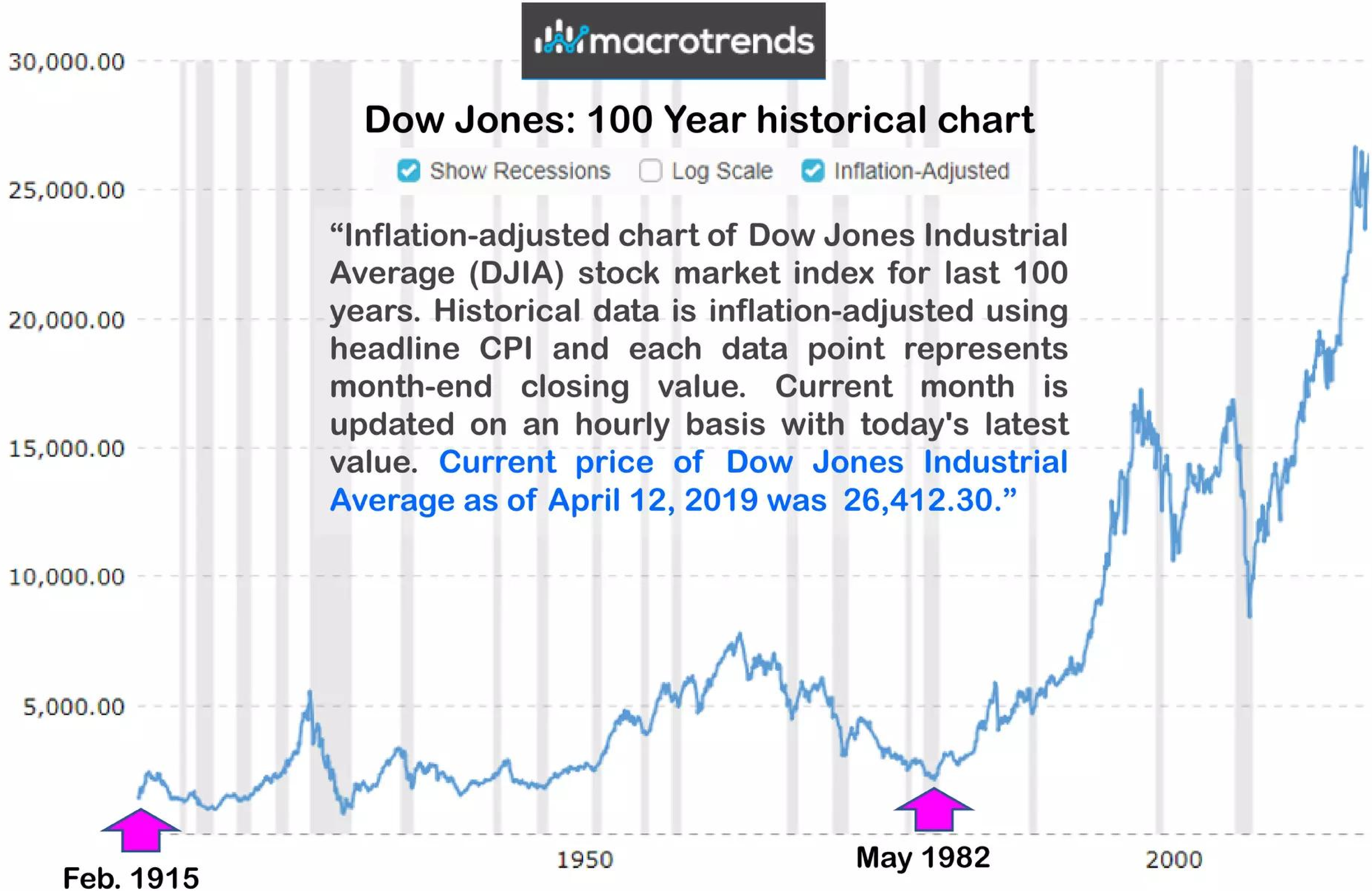
"GDPNow model estimate for real GDP growth (seasonally adjusted annual rate) in first quarter of 2019 is 2.3 percent on April 8, up from 2.1 percent on April 2."



https://www.frbatlanta.org/cqer/research/gdpnow.aspx

Inflation-adjusted chart of DJIA index going back to Feb. 1915

Market in major uptrend since 1982; 10-year correction from 1999 to 2009

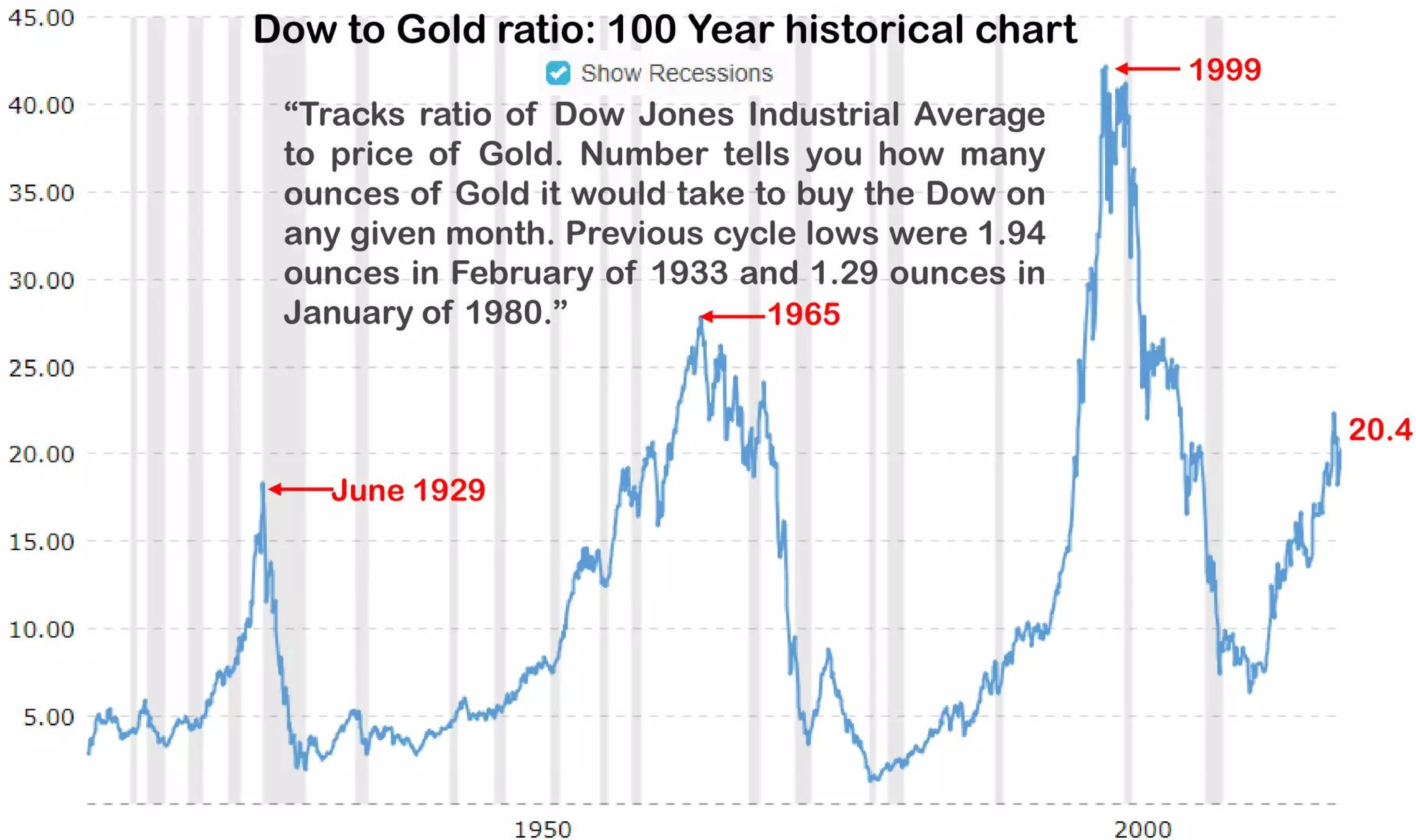


"Inflation-adjusted chart of Dow Jones Industrial Average (DJIA) stock market index for last 100 years. Historical data is inflation-adjusted using headline CPI and each data point represents month-end closing value. Current month is updated on an hourly basis with today's latest value. Current price of Dow Jones Industrial Average as of April 12, 2019 was 26,412.30."

Dow/Gold ratio reflects valuation of equities versus tangibles

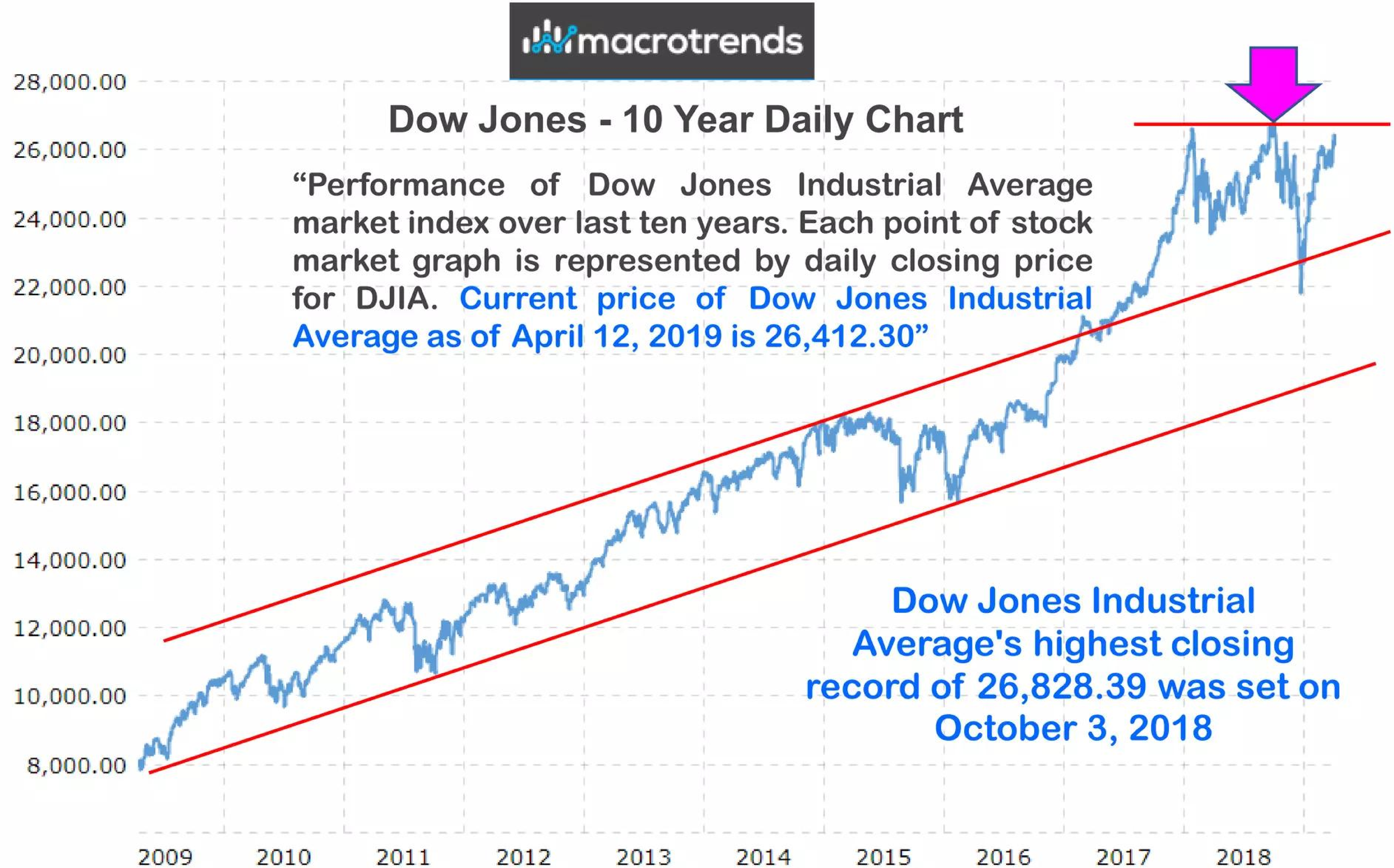
Value of DJIA/Gold ratio is now ~20.4 --- below peaks set in 1965 and 1999

macrotrends



DJIA time-series daily chart ranging from 2009 to 2019

Broad uptrend in market price has been operating from 2009 until today

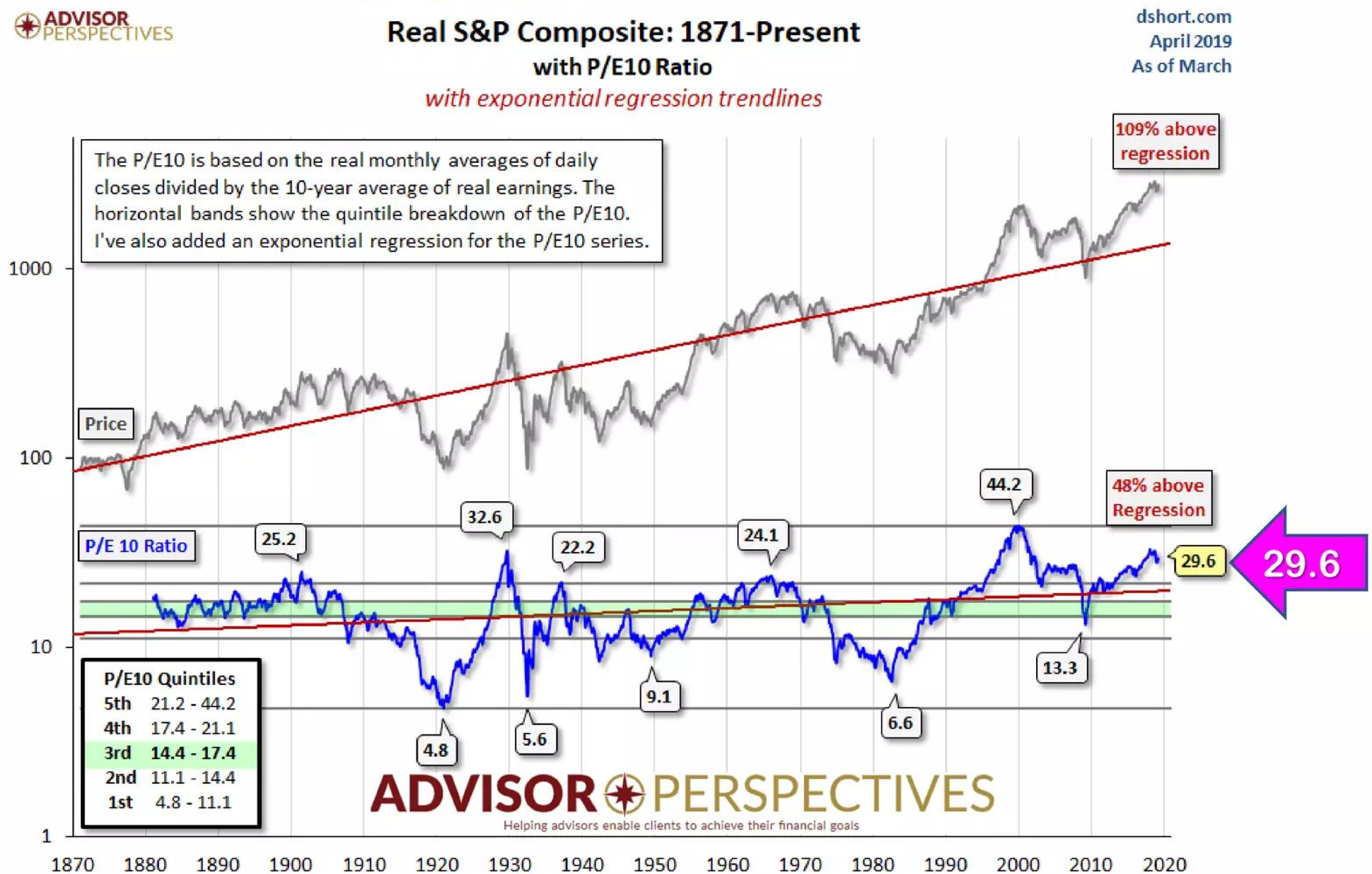


Cyclically adjusted P/E Ratio (= CAPE = P/E10) for S&P 500

Value of 29.6 not cheap: don't expect new highs from boosting P/E ratios

Is the Stock Market Cheap?

by Jill Mislinski, 4/1/19



https://www.advisorperspectives.com/dshort/updates/2019/04/01/is-the-stock-market-cheap

The China syndrome

Trade war with U.S. having broad effects on China's economy

China in structural shift toward less reliance on exports for GDP growth

China's Car Sales Just Fell for First Time in Over 20 Years

Bloomberg

Bloomberg News
January 9, 2019, 3:22 AM CST *Updated on January 9, 2019, 5:53 AM CST*

China Auto Sales Plunge, Face First Annual Decline in 30 Years

WOLF STREET
The Stories behind Business, Finance & Money

by Wolf Richter • Dec 11, 2018 • 60 Comments • Email to a friend

"To put this sales decline for the year 2018 into perspective: This is something that has simply not happened in modern China. And it's a total shock to the industry that has only known growth – and mostly at breakneck speeds. Data going back to 1990 show relentless annual sales increases, in many years by the double digits. Over the past 20 years, sales have boomed by a factor of 10. As sales stalled or fell in the US and other developed markets, China was moving from automotive backwater to the globe's only automotive superpower. In 2012, China became the largest auto market in the world, trouncing the US. In 2017, new-vehicle sales reached 28.9 million units. By comparison, in the US, new vehicle sales dropped to 17.2 million units, from the record of 17.6 million in 2016. China is not even playing in the same ballpark anymore."

https://wolfstreet.com/2018/12/11/china-auto-sales-plunge-face-first-annual-decline-in-30-years/

China's GDP growth rate has slowed down to ~ 6% per year

U.S. 2018 GDP growth ~ 3% but now has future potential to achieve 4 - 6%

No Middle Income Trap for China

Mar 27, 2019 | STEPHEN S. ROACH

Project Syndicate | THE WORLD'S OPINION PAGE

BEIJING – "There has always been a fixation on Chinese economic growth. And with good reason. For a large economy, sustaining annual growth rates of 10% over several decades is unprecedented. And yet that's exactly what China did from 1980 to 2011. But now the miracle is over. Since 2012, annual growth has slowed to 7.2%, and Premier Li Keqiang's recent annual "work report" set a growth target of just 6-6.5% for 2019."

"Lastly, productivity growth is far more important than GDP growth in determining a country's development prospects. As such, I would be far more worried about China falling into a productivity trap than a GDP growth trap … question now is whether China can sustain its recent TFP trajectory – a distinct possibility in light of an increasingly powerful shift to indigenous innovation and the sustained services-led productivity of a growing cohort of well-educated knowledge workers – and also reap the benefits of continued upgrading of its capital stock. If it can, the new Chinese study concludes that China's potential GDP growth rate could hold at nearly 6% over the next five years."

https://www.project-syndicate.org/commentary/china-no-middle-income-trap-by-stephen-s--roach-2019-03

Researcher argues China's GDP will never exceed that of U.S.

Cites close relationship between population age structure & GDP growth

Why ageing China won't overtake the US economy as the world's biggest – now or in the future South China Morning Post

Growth trajectories must take into account that China is ageing faster than the US. The experiences of Japan, Taiwan and South Korea bear out the correlation between growth and demographics, and economists optimistic about China's growth prospects should take note

Dr. Fuxian Yi (Senior Scientist, Univ. of Wisconsin - Madison) March 29, 2019

"China's median age is forecast to increase to 47 by 2033 and 56 in 2050. In the US, the median age will be 41 in 2033 and 44 in 2050. China's working-age population aged 20-64 began to shrink in 2017, while the US working-age population will not reach its peak until 2050. From the above, we can conclude that China's GDP growth may start to fall below the US' in around 2033, when the proportion aged over 65 begins to exceed that of the US. Assuming that China and the US will have GDP growth rates of 6.3 per cent and 3 per cent in 2019, and then fall to 2.2 per cent in 2033, the size of China's GDP, which was 66 per cent of the US GDP in 2018, will peak at 84 per cent in 2033. Thus, it's clear China's economy cannot exceed that of the United States."

https://www.scmp.com/comment/insight-opinion/article/3003524/ageing-china-simply-cannot-overtake-us-economy-worlds

Present $419 b U.S. trade deficit with China is unsustainable

Achieving fairer future trade relationship in best interest of both countries

the balance ▸ US Trade Deficit With China and Why It's So High

BY KIMBERLY AMADEO • Updated March 27, 2019

https://www.thebalance.com/u-s-china-trade-deficit-causes-effects-and-solutions-3306277

What might happen next?

Recession in U.S. appears unlikely during next 12 months

Outcome of U.S./China trade negotiations key unresolved risk

Long-term secular uptrend in U.S. stock market is still intact

Markets will set new all-time highs in 2019 given risk factors are resolved

Key long-term macroeconomic and technological forces that drove secular uptrend in U.S. stock market prices and parallel decline in global rates of inflation since 1980 continue to operate - see Jan. 17, 2018 Larsen PowerPoint

- One of several key market risks noted in Jan. 17, 2018 PowerPoint - too many interest rate hikes by U.S. Federal Reserve - appears to have been favorably resolved, for now. Fed was well on its way to making a serious policy error, triggering a recession, when they saw modest slowing in U.S. economy and substantial slowdowns in China & Germany in parallel with continued low inflation rates. Fed recently signaled no more rate hikes in 2019 and left door open to loosen if data shows U.S. economy is slowing further or yield curve inverts. Mid-March 2019, Federal Reserve Chairman Jerome Powell publicly stated that too-low inflation was “one of the major challenges of our time.’’ Puzzling absence of very much inflation is a mystery to many economists because they don’t realize we’re now living in a Fischer Period of Equilibrium

- Second major market risk – President Trump being impeached and removed from office - seems to have been favorably resolved. Although Republicans lost control of U.S. House in Nov. 6, 2018 elections, after months of media speculation about results of Mueller investigation, on March 24, 2019 U.S. AG Barr issued summary of Mueller’s report saying no collusion or obstruction by Trump. Negative impact from Trump being removed from office is now unlikely

Successful negotiation of good U.S.-China trade deal is key

Fairer trade relations would have very positive impact on U.S. GDP growth

- Assuming U.S. Fed abstains from additional 2019 tightening and Anxious Index model's signal is correct that U.S. won't slip into recession before end of 3Q 2019, last remaining unresolved major risk is outcome of U.S.-China trade negotiations. Market indexes may go sideways until issue is resolved. If both countries conclude a deal that is clearly more balanced and reciprocal – i.e. fairer to U.S. – stock markets will almost certainly make new all-time highs

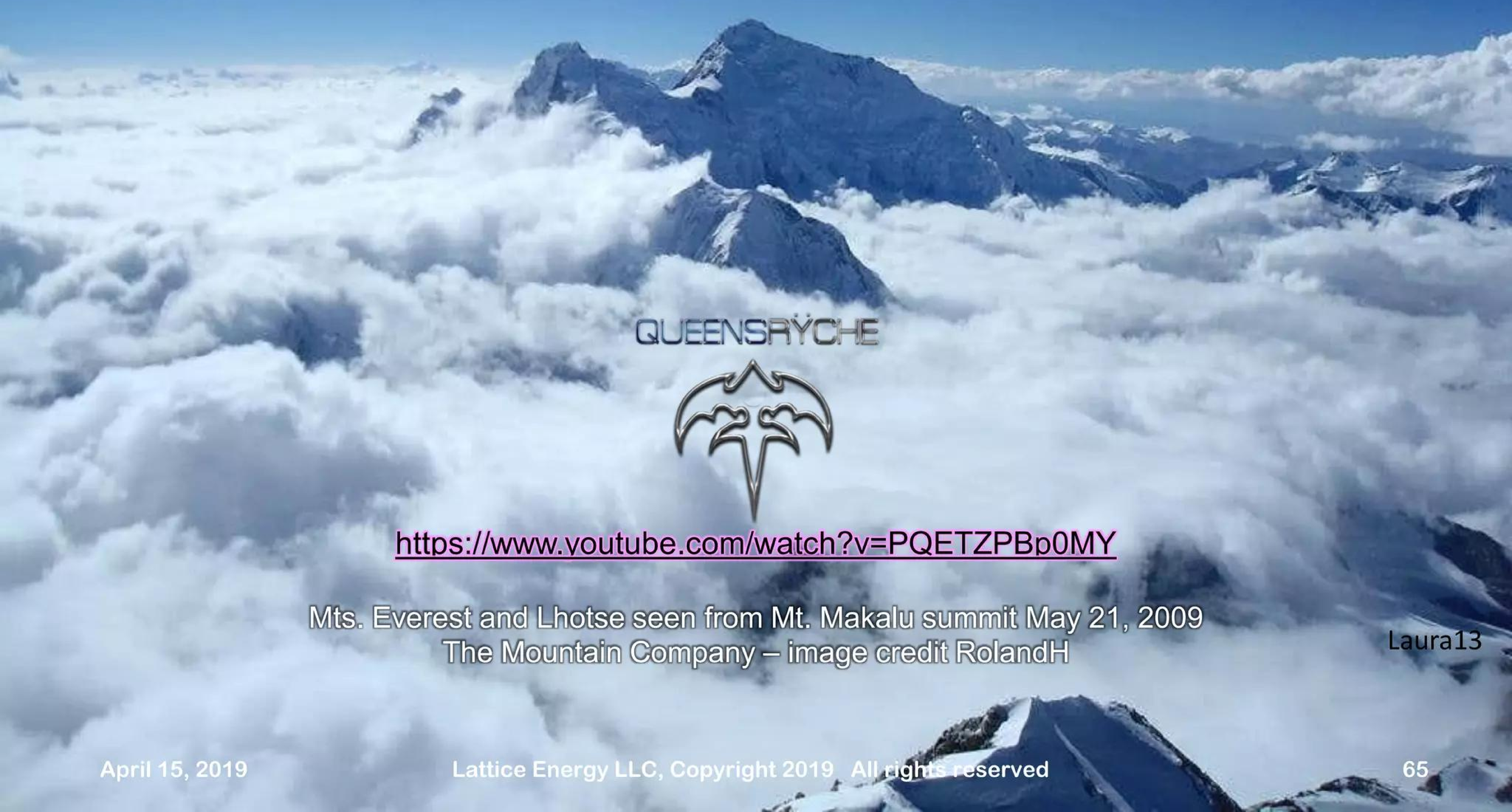
- Underlying these trade negotiations is a new economic reality: for many types of manufacturing, e.g. motor vehicles, there is no longer any large $ cost advantage in outsourcing to China. This startling development was reported by The Boston Consulting Group (BCG) in a landmark 2017 study (see Slide #9 herein). Relentless outsourcing of all kinds of manufacturing from U.S. to China helped fuel China's phenomenal GDP growth from 1990 until today. That key source of economic growth will fade soon, *with or without a trade deal*. Reversal of outsourcing only requires U.S. companies to do what is economic; however, failure of trade talks would cause brief market correction

- Markets will likely move sideways in very broad range if there is no U.S./China trade deal AND no U.S. recession. If U.S. economy starts to speed-up again by 3Q 2019 and/or good trade deal completed, DJIA could make new all-time highs and increase by 3,000 – 6,000 points over next 6 - 18 months. This would not be driven by boosting P/E ratios, but by strong corporate earnings growth

Endless ups and downs of markets fascinate and mesmerize

**“Taking time … from all this worry. Mesmerized … by the waves of your smile.
Wish that I … could say something, but you're the rose-colored glass I see through.
I'll see you through … chasing blue sky, we're chasing blue sky.”**

Queensrÿche (released 2000 - 3:41 on YouTube)



https://www.youtube.com/watch?v=PQETZPBp0MY

Mts. Everest and Lhotse seen from Mt. Makalu summit May 21, 2009
The Mountain Company – image credit RolandH

Laura13