

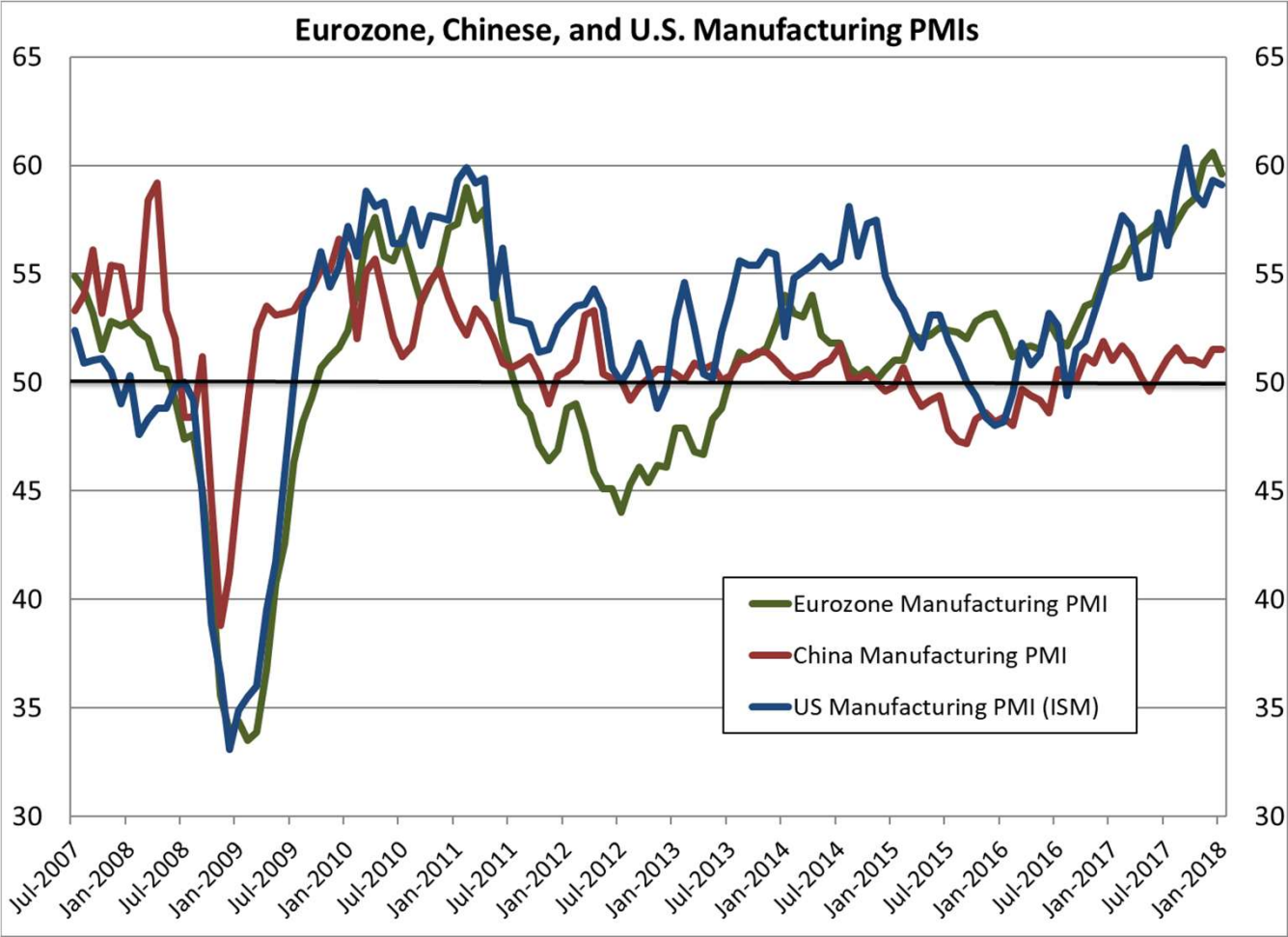
Economic, Financial, and Technology Outlook February 2019

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President of Prestige Economics
Chairman of The Futurist Institute

Global Growth

Global PMIs for U.S. and Europe Show Extreme Strength, Modest China Expansion Continues

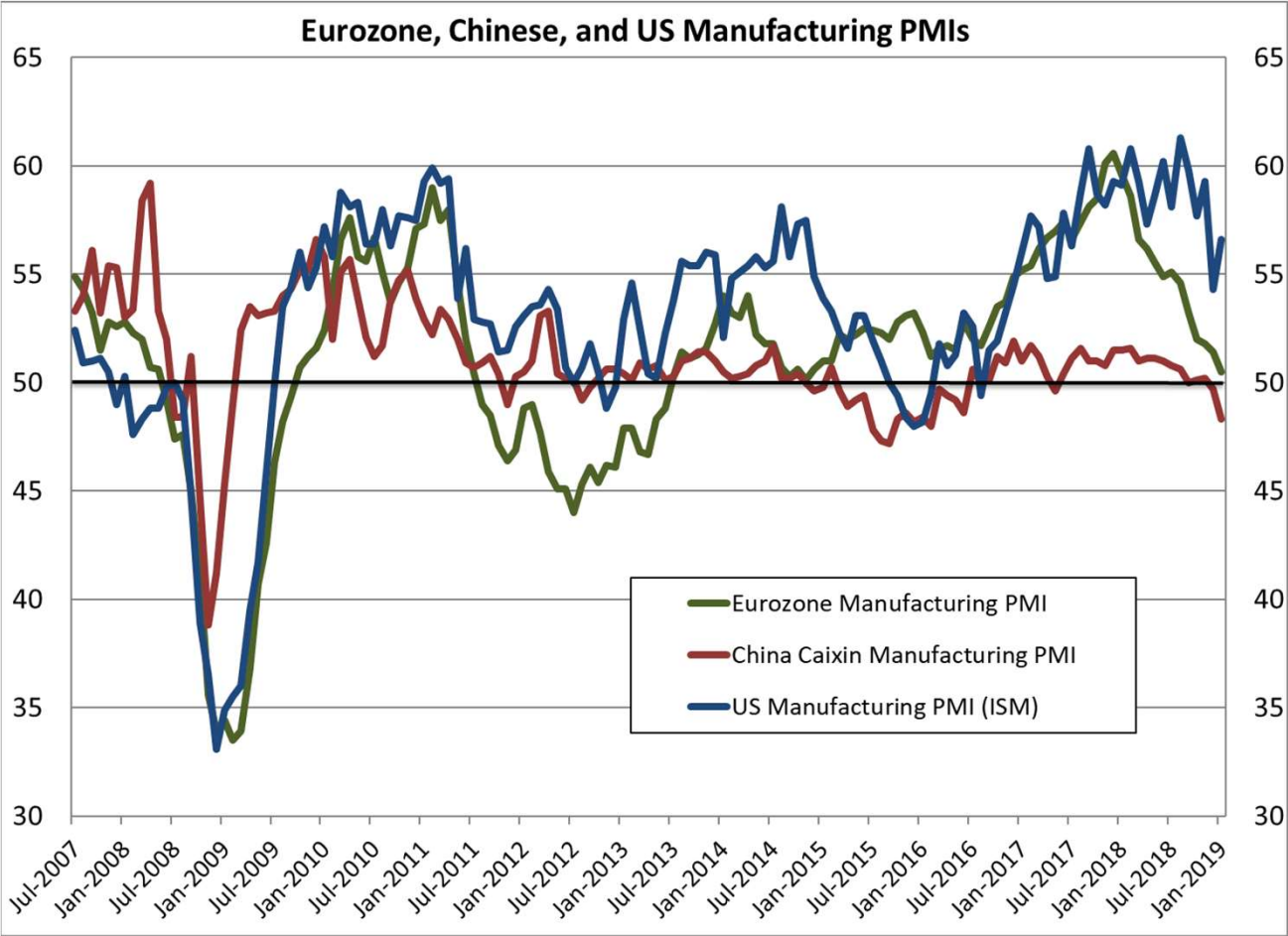
2018 Outlook



Source: Markit, Econoday, Prestige Economics, LLC

Manufacturing PMIs: China Contracted Again / Eurozone Slowed / ISM Rose

January 2019



Source: Markit, Econoday, Prestige Economics, LLC

IMF Growth Forecasts were Elevated in Jan 2018 and Kept High Until Oct 2018

From January 2018

IMF Growth Forecasts - January 2018 - Annual Forecasts Real GDP, Year-over-Year % Change				
	2016	2017	2018	2019
Global	3.2	3.7	3.9	3.9
Eurozone	1.8	2.4	2.2	2.0
U.S.	1.5	2.3	2.7	2.5
Japan	0.9	1.8	1.2	0.9
U.K.	1.9	1.7	1.5	1.5
Canada	1.5	3.0	2.3	2.0
Mexico	2.9	2.0	2.3	3.0
Brazil	-3.5	1.1	1.9	2.1
Russia	-0.2	1.8	1.7	1.5
India	7.1	6.7	7.4	7.8
China	6.7	6.8	6.6	6.4

Source: IMF, Prestige Economics, LLC

IMF Growth Forecasts Were Lowered in Oct 2018 and Jan 2019

January 2019

IMF Annual GDP Growth Forecasts – January 2019 – Real GDP, Year-over-Year % Change				
	2017	2018	2019	2020
Global	3.8	3.7	3.5	3.6
Eurozone	2.4	1.8	1.6	1.7
U.S.	2.2	2.9	2.5	1.8
Japan	1.9	0.9	1.1	0.5
U.K.	1.8	1.4	1.5	1.6
Canada	3.0	2.1	1.9	1.9
Mexico	2.1	2.1	2.1	2.2
Brazil	1.1	1.3	2.5	2.2
Russia	1.5	1.7	1.6	1.7
India	6.7	7.3	7.5	7.7
China	6.9	6.6	6.2	6.2

Source: IMF, Prestige Economics, LLC

U.S. Growth

U.S. Outlook Expectations and Forecasts

January 2019 Outlook

Prestige Economics: Macroeconomic Forecasts

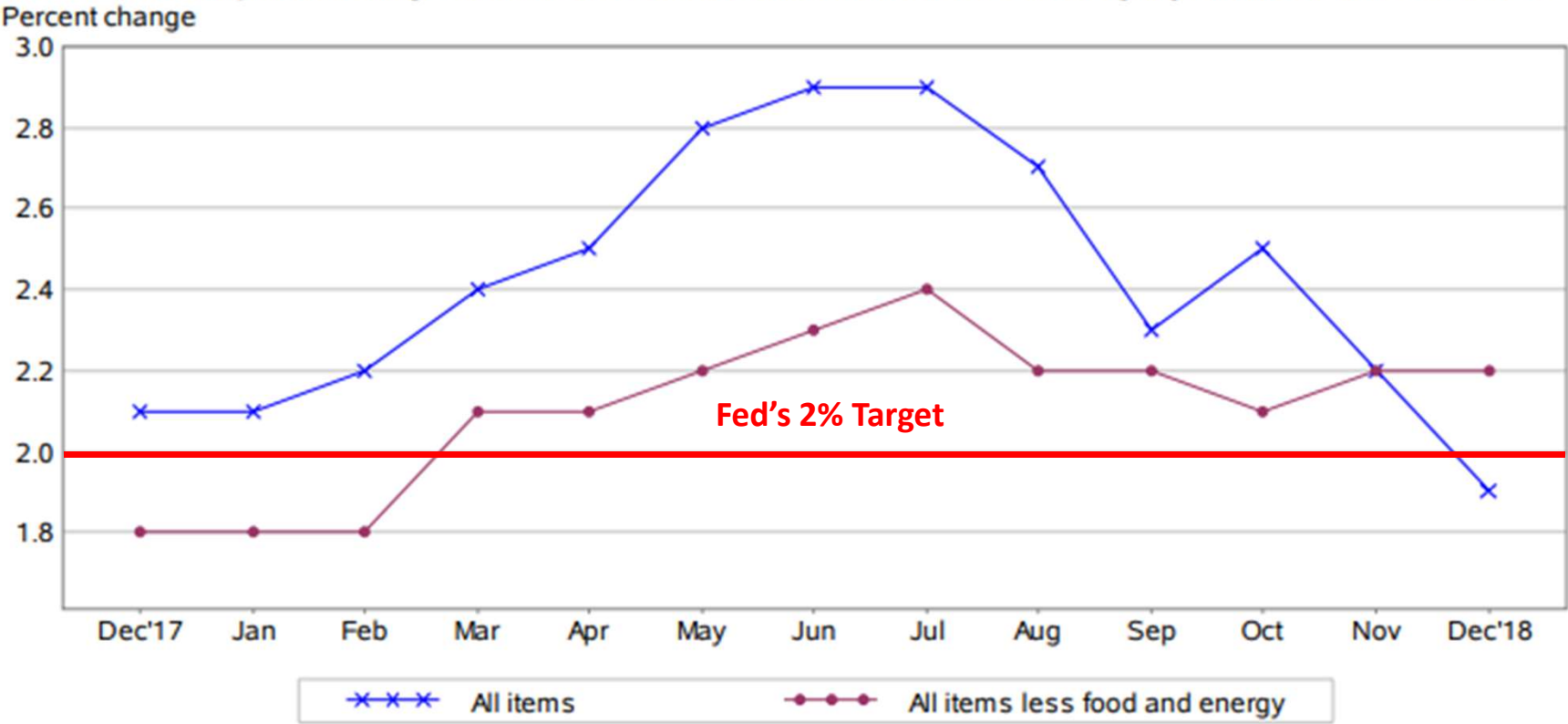
	18 Q1	18 Q2	18 Q3	18 Q4	19 Q1	19 Q2	19 Q3	19 Q4	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Real GDP (Year-over-Year)	2.6	2.9	3.0	3.0	2.8	2.1	1.5	1.0	-2.8	2.5	1.6	2.2	1.8	2.5	2.9	1.6	2.2	2.9	1.9	1.1	2.4
Real GDP (Quarter-over-Quarter)	2.2	4.2	3.4	2.3	1.5	1.3	0.8	0.5													
Unemployment Rate	4.0	3.9	3.8	3.8	3.9	4.0	4.2	4.4	9.4	9.6	9.0	8.1	7.4	6.2	5.3	4.8	4.4	3.9	4.1	4.6	4.8
Consumer Price Index	2.2	2.7	2.6	2.2	1.3	0.7	0.8	1.2	-0.4	1.6	3.2	2.1	1.5	1.6	0.1	1.3	2.1	2.4	1.0	1.3	1.7
Core Consumer Price Index	1.9	2.2	2.2	2.2	1.7	1.6	1.9	1.9	1.7	1.0	1.7	2.1	1.8	1.7	1.8	2.2	1.8	2.1	1.8	1.6	1.8
Fed Funds Rate (Upper Limit)	1.75	2.00	2.25	2.50	2.50	2.50	2.50	2.50	0.25	0.25	0.25	0.25	0.25	0.25	0.50	0.75	1.50	2.50	2.50	2.25	2.00

Source: Prestige Economics, LLC

From the Prestige Economics January 2019 Monthly Outlook and Forecast Report.

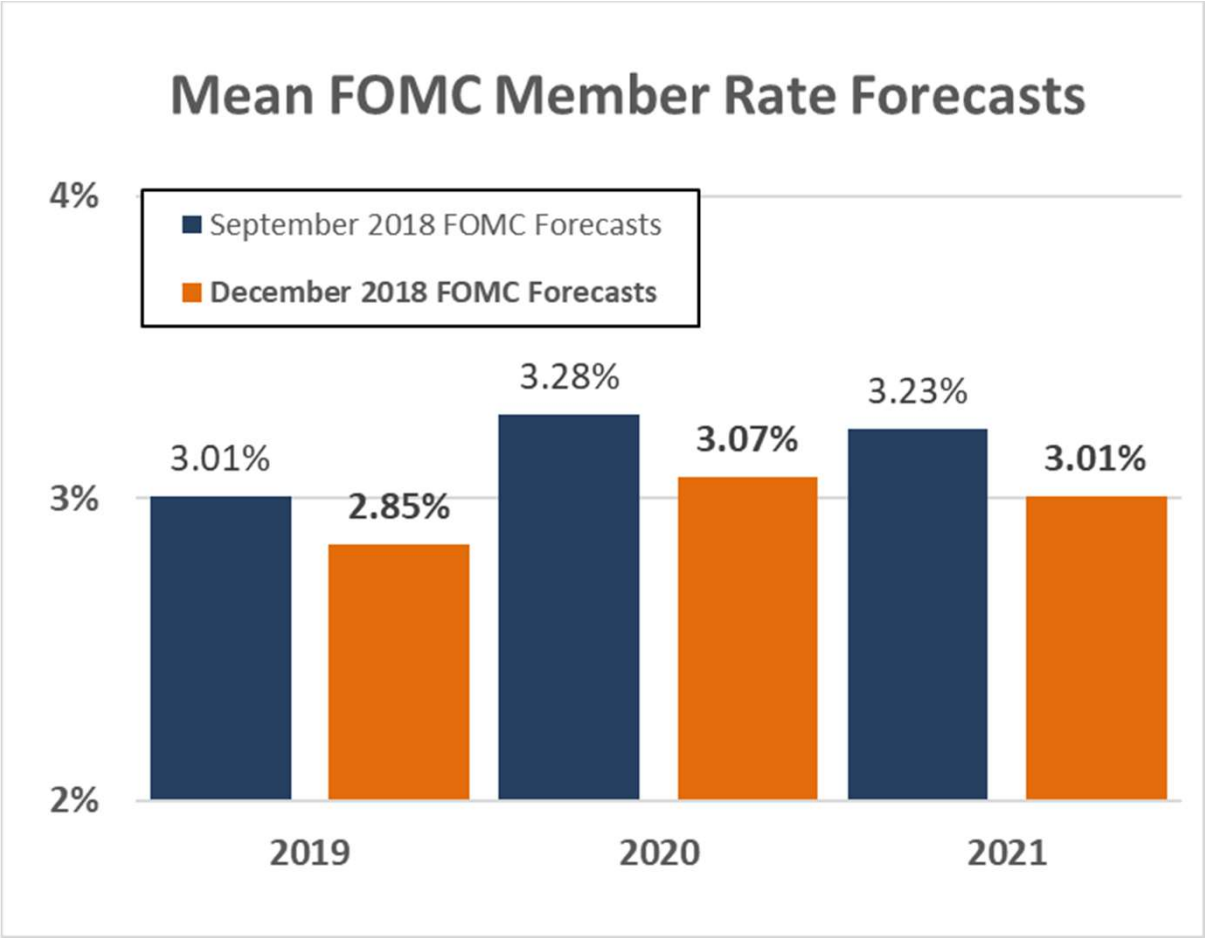
Consumer Price Index – January 2019

Chart 2. 12-month percent change in CPI for All Urban Consumers (CPI-U), not seasonally adjusted, Dec. 2017 - Dec. 2018



Sources: BLS, Prestige Economics

Fed Lowered Rate Forecasts in December 2018 - But Still Expects Hikes



Sources: Federal Reserve, Prestige Economics

The Forward Curve Has Narrowed



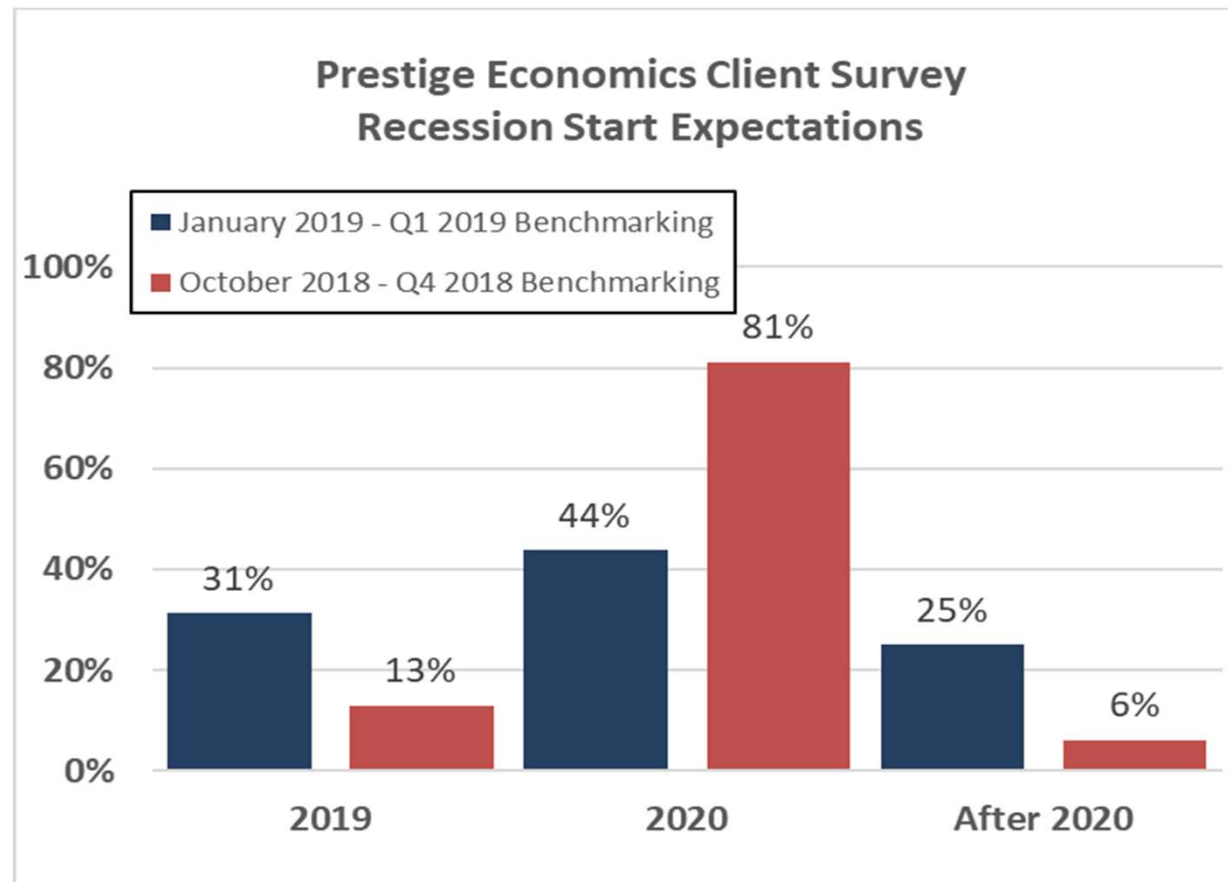
Sources: Federal Reserve, Prestige Economics, OPEC

U.S. Fixed Investment was in Recession 2015-2016

				Seasonally adjusted at annual rates															
	2014	2015	2016	2013	2014				2015				2016				2017		
				Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3'
Gross private domestic investment	0.90	0.87	-0.28	0.91	-0.93	2.47	1.90	-0.21	2.12	0.14	0.33	-1.08	-0.68	-0.45	0.40	1.34	-0.20	0.64	1.19
Fixed investment	0.97	0.64	0.12	1.01	0.76	1.56	1.45	0.04	0.67	0.77	0.55	-0.41	-0.05	0.22	0.25	0.28	1.27	0.53	0.40
Nonresidential	0.86	0.30	-0.08	1.16	0.85	1.16	1.31	-0.30	0.30	0.38	0.19	-0.67	-0.52	0.41	0.42	0.02	0.86	0.82	0.58
Structures	0.30	-0.06	-0.12	0.06	0.57	0.36	-0.05	0.14	-0.07	0.14	-0.50	-0.69	0.06	0.01	0.37	-0.06	0.39	0.20	-0.21
Equipment	0.39	0.21	-0.20	1.05	0.02	0.61	1.07	-0.76	0.49	0.06	0.58	-0.28	-0.82	-0.04	-0.12	0.10	0.24	0.48	0.58
Information processing equipment	0.07	0.07	0.03	-0.04	0.07	0.25	-0.07	0.14	-0.02	0.08	0.23	0.04	-0.16	0.08	0.10	0.05	0.13	0.17	0.17
Computers and peripheral equipment	0.01	-0.02	-0.01	0.08	-0.07	0.09	-0.02	0.03	-0.11	0.02	0.05	-0.10	-0.02	0.01	0.00	-0.01	0.01	0.15	0.10
Other	0.06	0.09	0.05	-0.11	0.14	0.16	-0.05	0.12	0.09	0.06	0.18	0.14	-0.14	0.06	0.11	0.06	0.11	0.02	0.07
Industrial equipment	0.05	0.01	0.03	-0.12	0.15	0.17	0.15	-0.22	0.00	0.12	-0.02	0.09	-0.07	0.08	0.03	0.07	0.09	0.14	0.09
Transportation equipment	0.17	0.16	-0.12	0.49	-0.03	0.22	0.41	-0.25	0.50	-0.06	0.37	-0.24	-0.37	0.01	-0.23	-0.05	-0.04	0.02	0.21
Other equipment	0.10	-0.04	-0.14	0.72	-0.17	-0.03	0.58	-0.43	0.00	-0.08	0.00	-0.17	-0.23	-0.21	-0.03	0.04	0.06	0.15	0.11
Intellectual property products	0.18	0.15	0.25	0.04	0.26	0.19	0.29	0.31	-0.11	0.19	0.11	0.31	0.24	0.43	0.17	-0.02	0.23	0.15	0.21
Software	0.14	0.10	0.13	0.08	0.18	0.21	0.19	0.05	0.11	0.07	0.05	0.12	0.17	0.19	0.12	0.04	0.09	0.13	0.15
Research and development	0.04	0.02	0.11	-0.04	0.10	-0.01	0.09	0.23	-0.25	0.09	0.04	0.17	0.08	0.25	0.02	-0.07	0.13	0.02	0.05
Entertainment, literary, and artistic originals	0.00	0.02	0.01	0.00	-0.02	-0.01	0.01	0.03	0.03	0.02	0.03	0.01	0.00	-0.01	0.03	0.02	0.01	0.00	0.00
Residential	0.11	0.34	0.20	-0.15	-0.09	0.40	0.14	0.35	0.37	0.39	0.36	0.26	0.47	-0.18	-0.18	0.26	0.41	-0.30	-0.18

Source: Prestige Economics, LLC and BEA

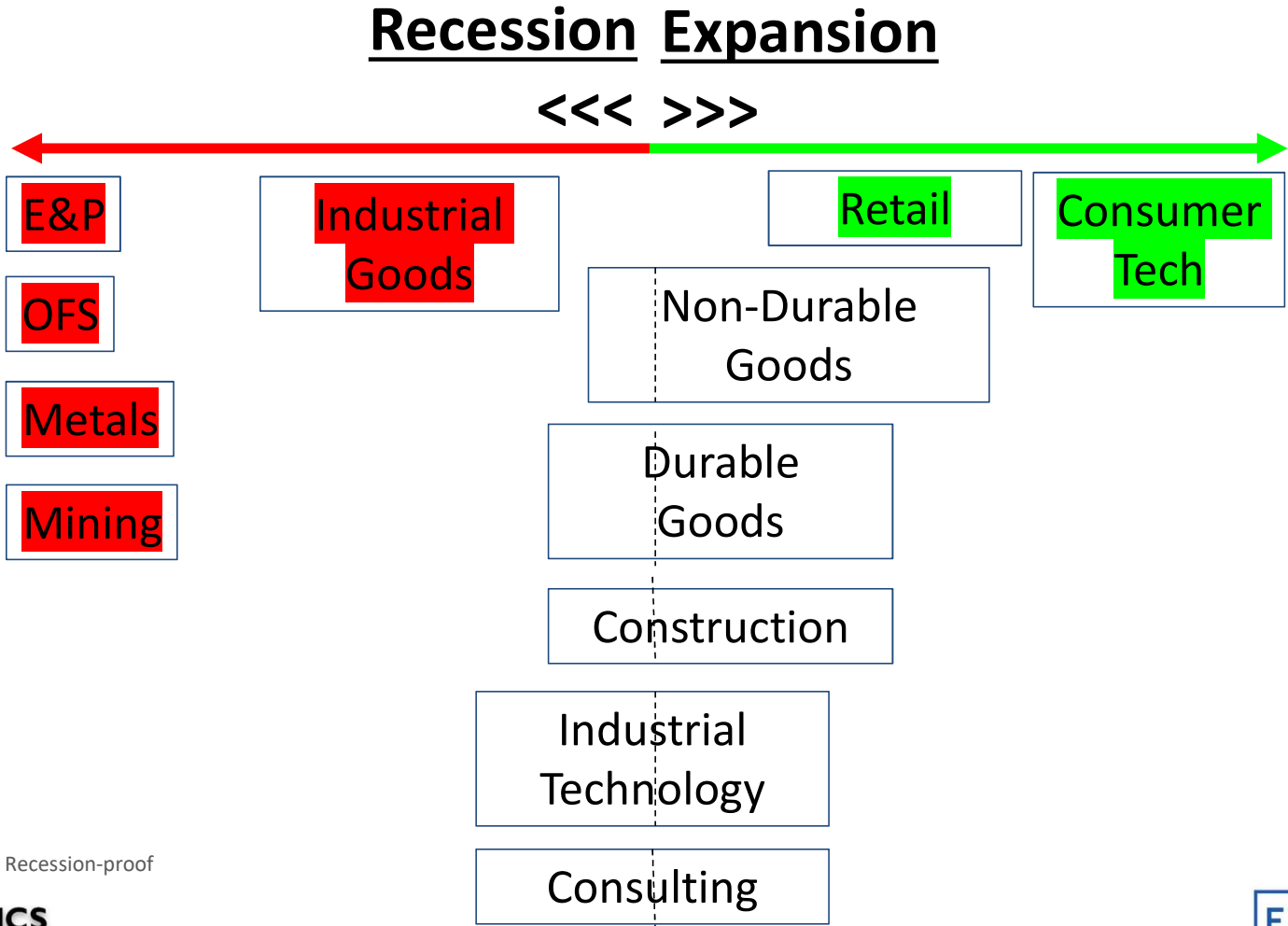
Client Survey: Timing of the Next U.S. Recession 75% Next 24 Months



Source: Prestige Economics

Different Industries are at Different Places in the Cycle

Oct 2015



Source: Recession-proof

2018 Outlook was Solid Expansion

2018 Outlook

Recession Expansion

<<< >>>



Consumer Tech / Retail

E&P

Non-Durable Goods

OFS

Durable and Industrial Goods

Metals

Mining

Construction

Industrial Technology

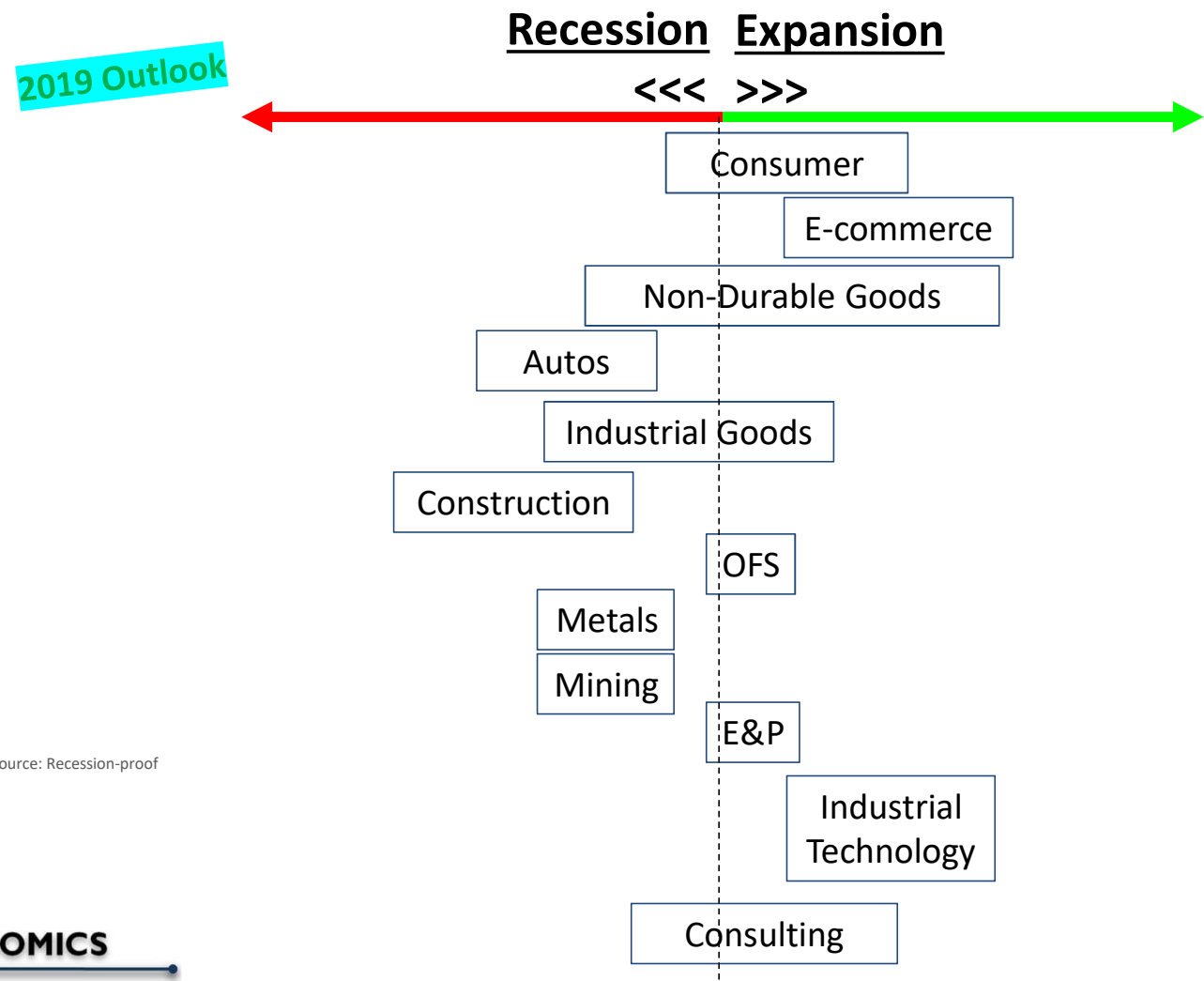
Consulting



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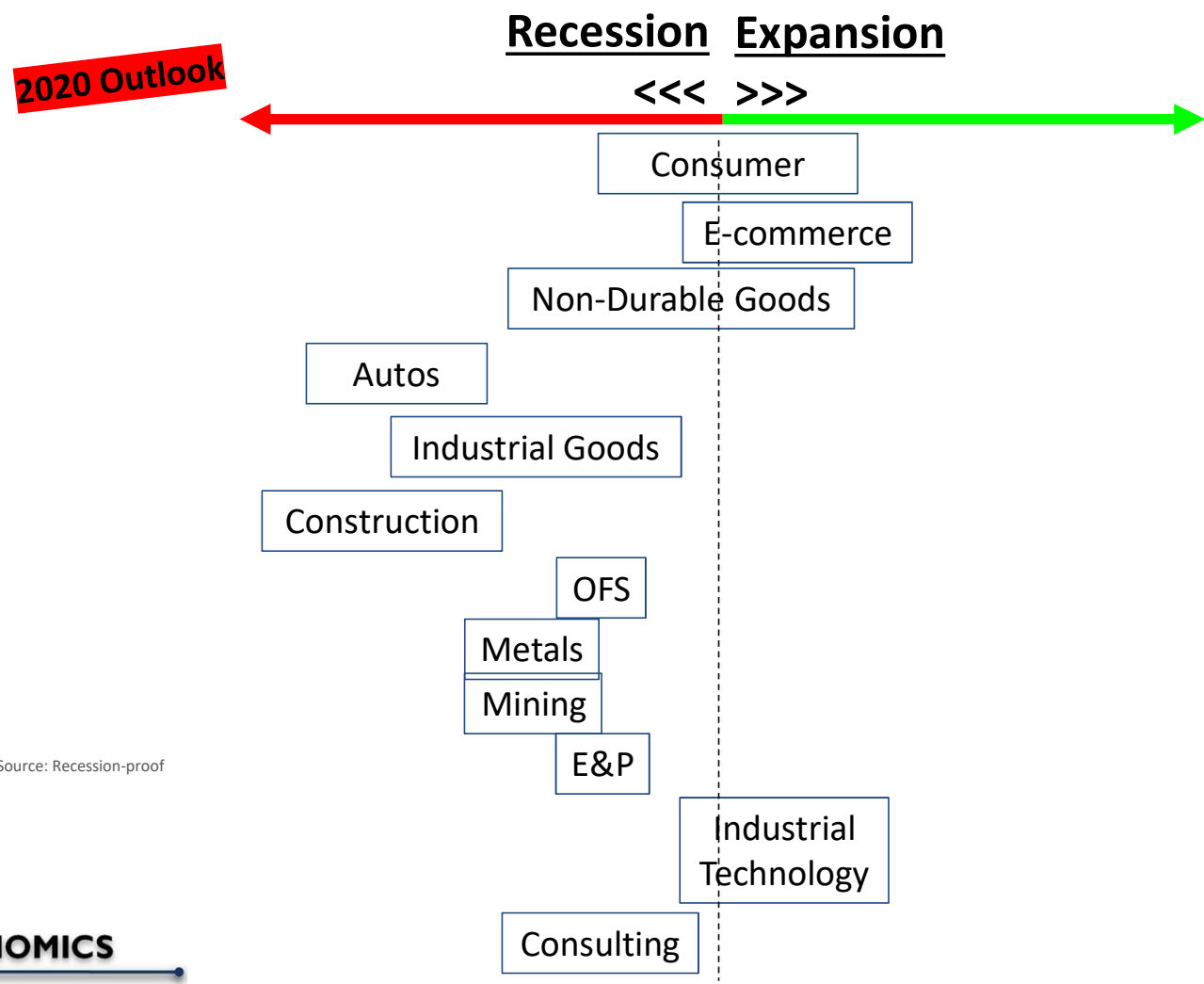
Source: Recession-proof

2019 Outlook is More Mixed than 2018: Industry Outlooks Differ



Source: Recession-proof

2020 Outlook is Weaker: Late Cycle Risks are Rising



Source: Recession-proof

Current Upside and Downside Economics Risks

Upside Economic Risks

- *Global economy is expanding and growth is expected to remain positive through 2020. But recent IMF forecasts were lowered for 2019 and 2020 growth rates.*
- *The U.S. economy has been expanding, with leading indicators and confidence at strong levels. But these have recently slowed.*
- *Fed likely to leave rates on hold.*
- *Oil prices have fallen, but likely to be supported during the driving season.*

Downside Economic Risks

- *Trade and tariff risks.*
- *Labor costs are rising. The market is tight.*
- *Chinese FX war is on.*
- *Chinese manufacturing recession ended in June 2016, with expansions – up until September 2018, when growth stopped. The Caixin subsequently contracted in December 2018 and January 2019.*
- *Emerging market risks have risen.*
- *Auto sales have slowed and should be watched closely.*
- *Housing has slowed and should be watched closely.*

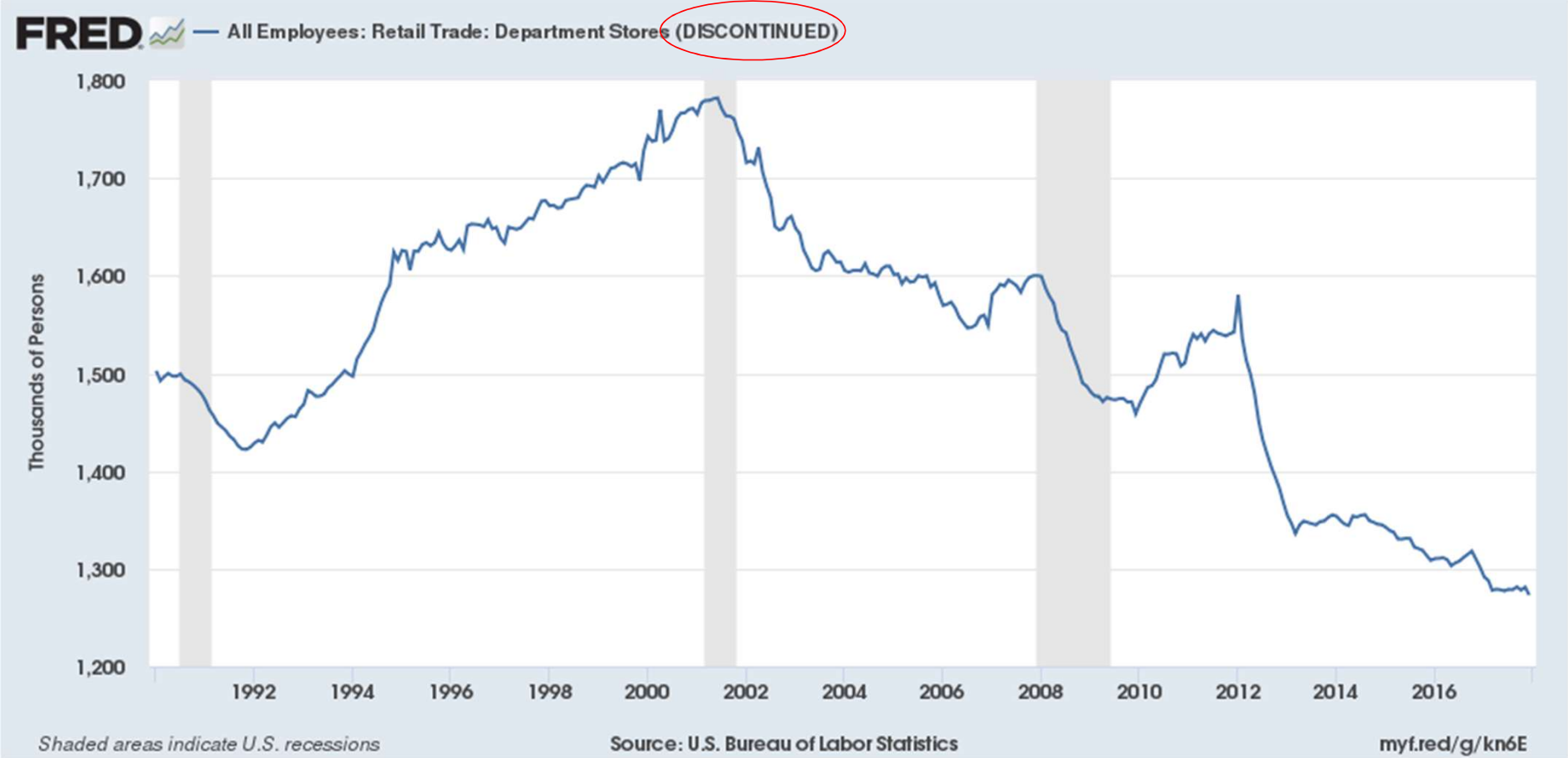
Jobs and E-Commerce

U.S. Economy is at Full Employment



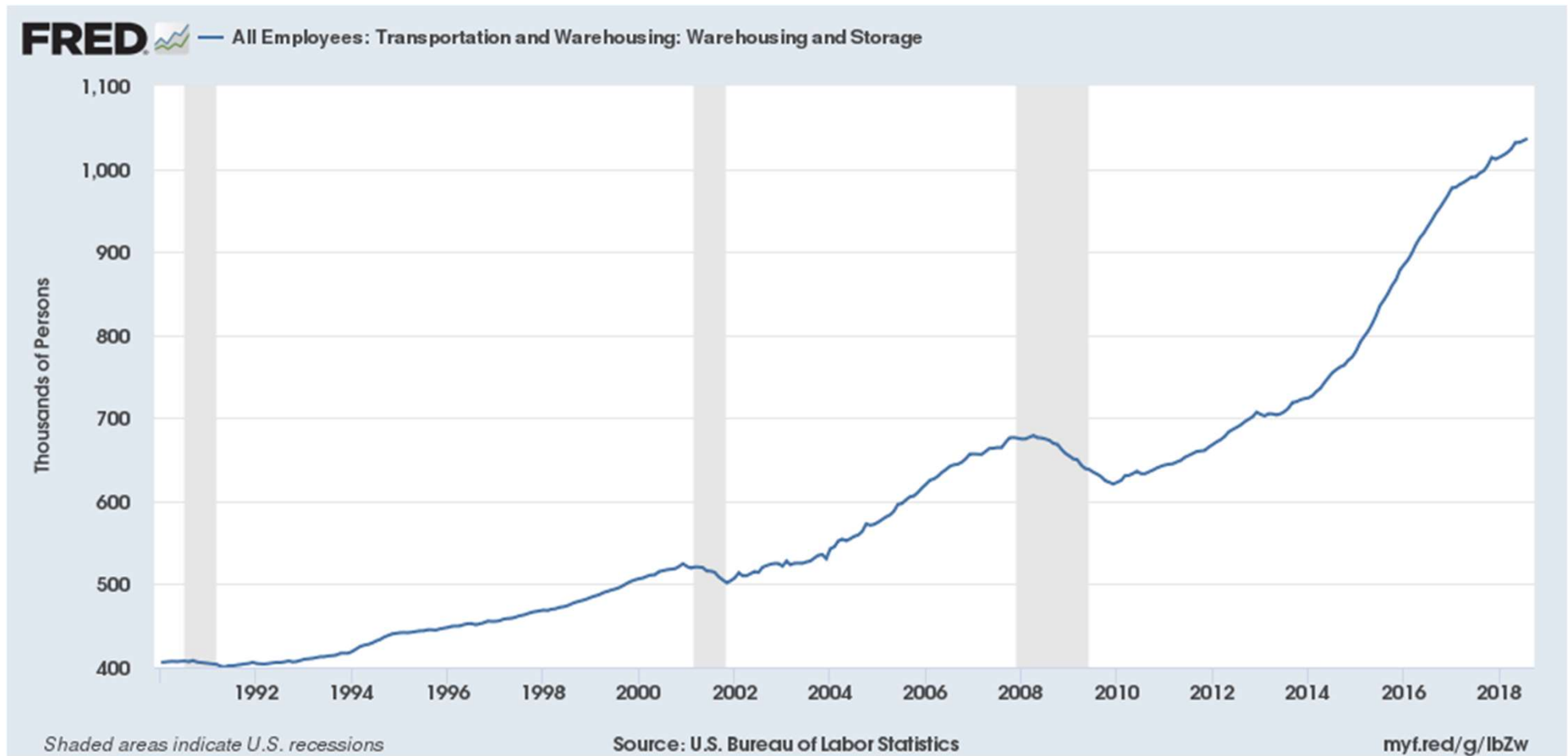
Source: FRED, Prestige Economics

Retail Trade: Jobs in Department Stores Falling



Source: FRED, Prestige Economics

Wholesale: Jobs Have Risen Since the Great Recession



Show Real Data – Warehousing Jobs Pay More

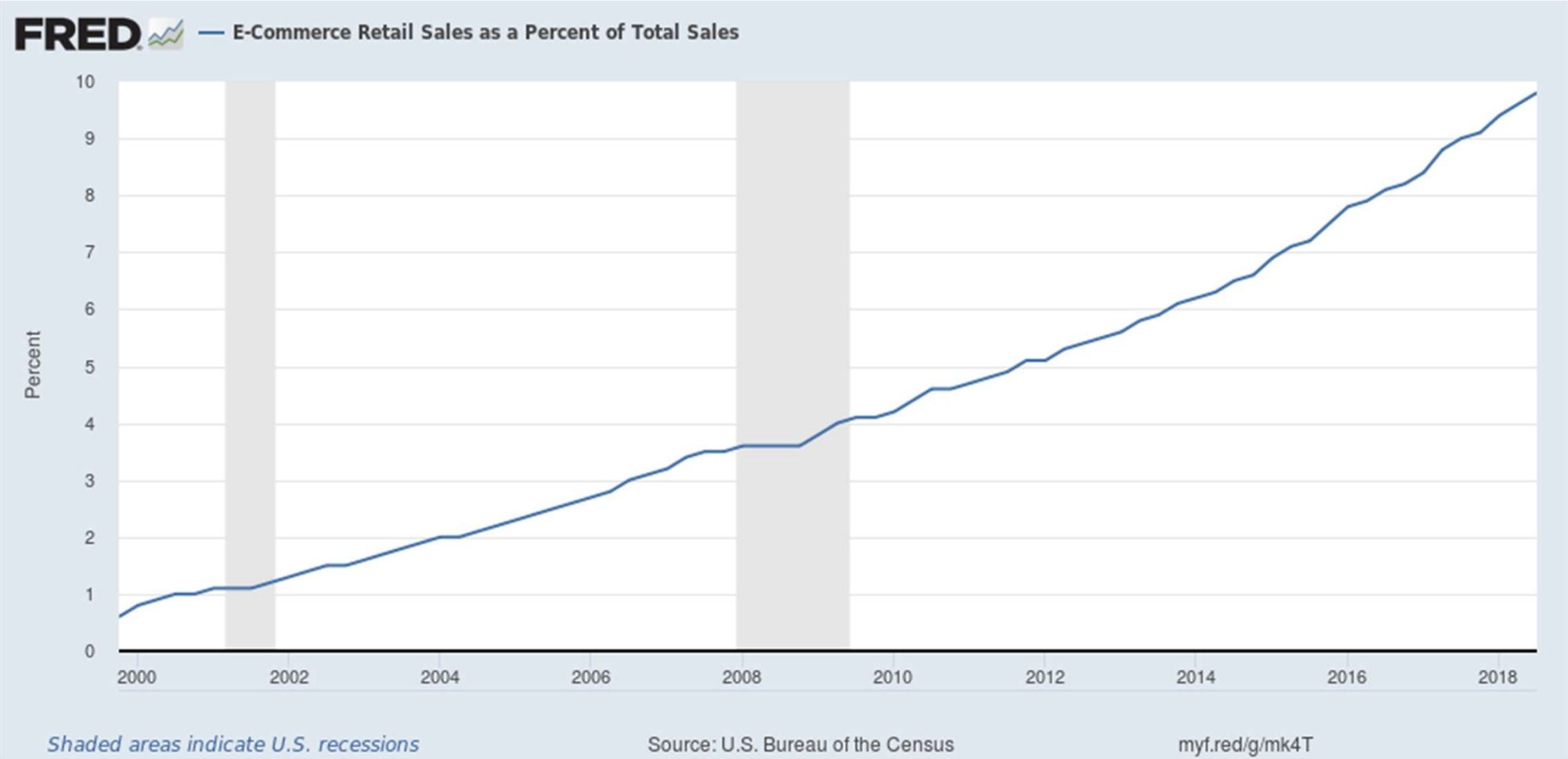
Retail Jobs

Industry	Employment (1)	Percent of industry employment	Hourly mean wage	Annual mean wage (2)
General Merchandise Stores	838,540	26.04	\$11.58	\$24,090
Clothing Stores	747,000	70.22	\$11.98	\$24,920
Building Material and Supplies Dealers	416,700	36.96	\$14.06	\$29,240
Sporting Goods, Hobby, and Musical Instrument Stores	302,150	56.26	\$11.57	\$24,060
Automobile Dealers	275,740	21.39	\$21.50	\$44,720

Warehousing Jobs

Data series	Wages, 2017			
	Hourly		Annual	
	Median	Mean	Median	Mean
Industrial truck and tractor operators	16.43	16.99	34,180	35,340
Laborers and freight, stock, and material movers, hand	14.28	15.12	29,710	31,450
Shipping, receiving, and traffic clerks	15.28	16.36	31,780	34,020
Stock clerks and order fillers	14.90	15.76	31,000	32,790
Transportation, storage, and distribution managers	43.21	45.57	89,870	94,780

E-Commerce as a Percent of Retail Sales is Low, But Rising



Source: FRED, Prestige Economics

Currency Dynamics

Dollar Below Critical Technicals

Current



Source: NYBOT, Prestige Economics

Euro Set to Rise Further

Current



Source: NYBOT, Prestige Economics

Oil and OPEC

WTI Crude Oil Trading Dynamics – Short-Term Technicals

Current



Source: NYMEX, Prestige Economics

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WTI Crude Oil – Long-Term Dynamics

Current



Source: NYMEX, Prestige Economics

PRESTIGE ECONOMICS



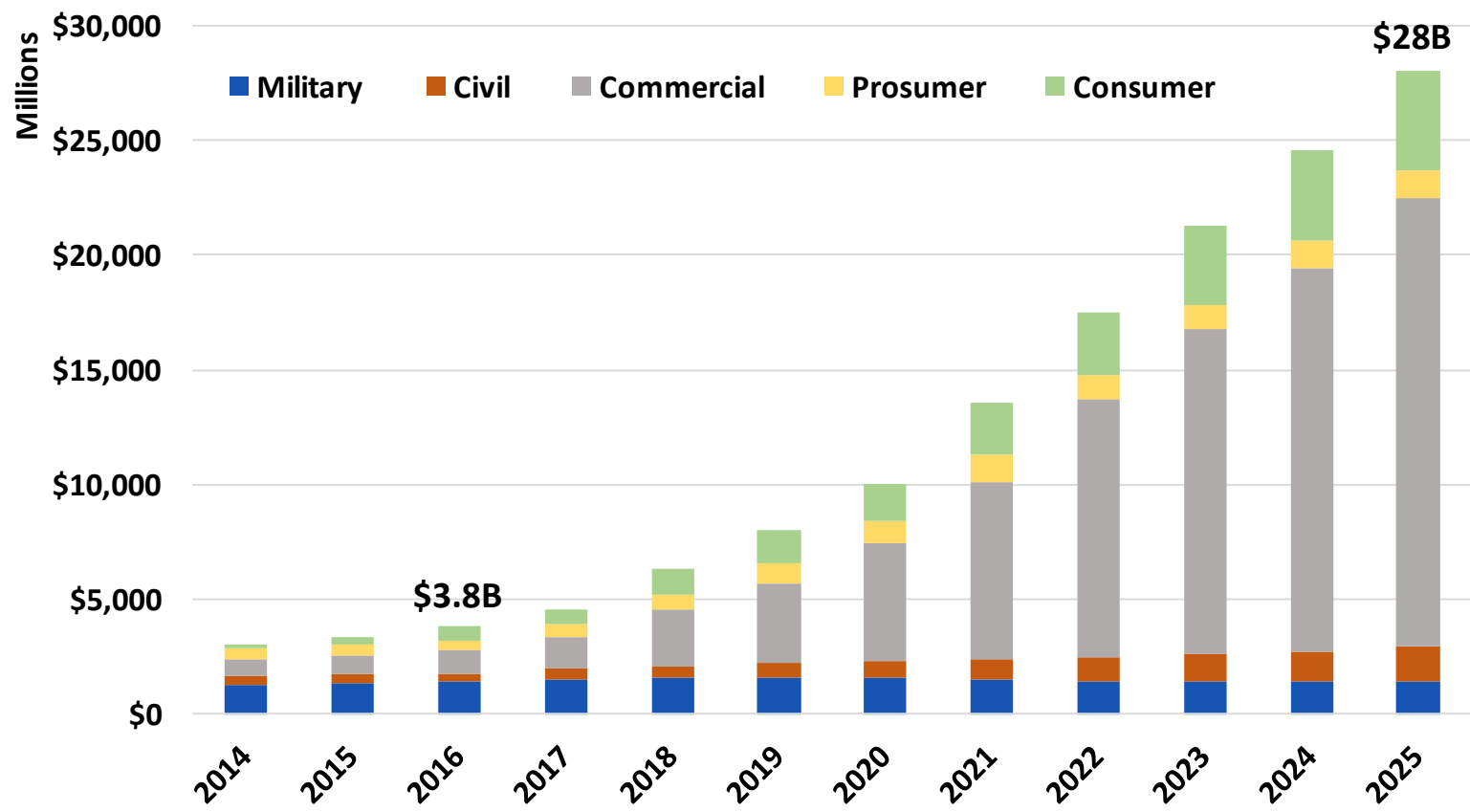
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Self-Driving Cars are Coming



Source: Prestige Economics, Waymo

Total Small Unmanned Aerial Vehicle Ecosystem Revenue



Source: ABI Research, Prestige Economics, LLC

But What About Electric Cars?



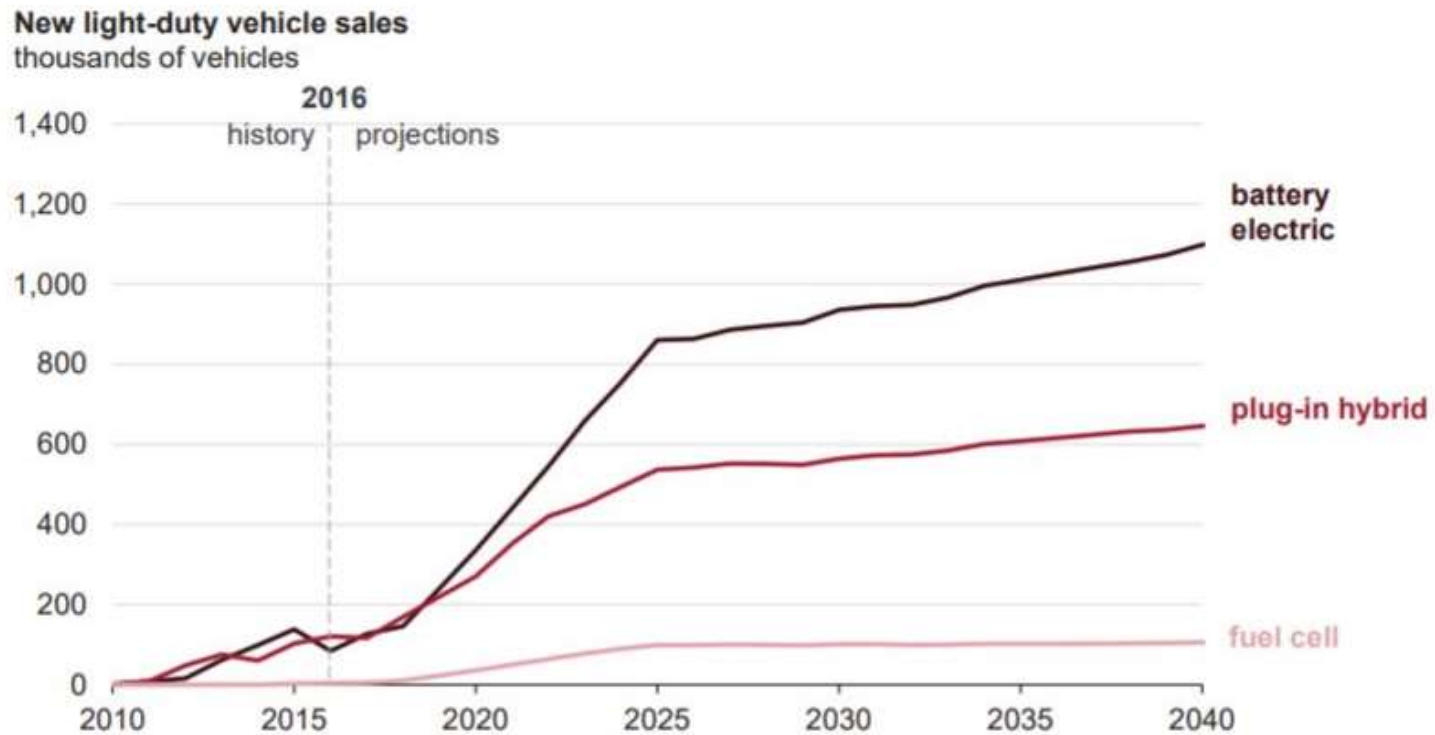
Expectations for Driverless Cars

Based on September 2015 survey data from the World Economic Forum, 79 percent of respondents expect 10 percent of cars will be driverless by 2025.

In Contrast: EIA forecasts of future electric vehicles reflect between 1 and 6 percent of new U.S. vehicles through 2040.

Source: Prestige Economics, EIA, WEF

Electric Vehicle Expectations are Muted



Source: Prestige Economics, EIA

Metals

Aluminum Prices Fell on Trend on 2018

Current



Source: Prestige Economics

Copper Prices in a Downward Channel

Current



Gold Prices Up Since August

Current

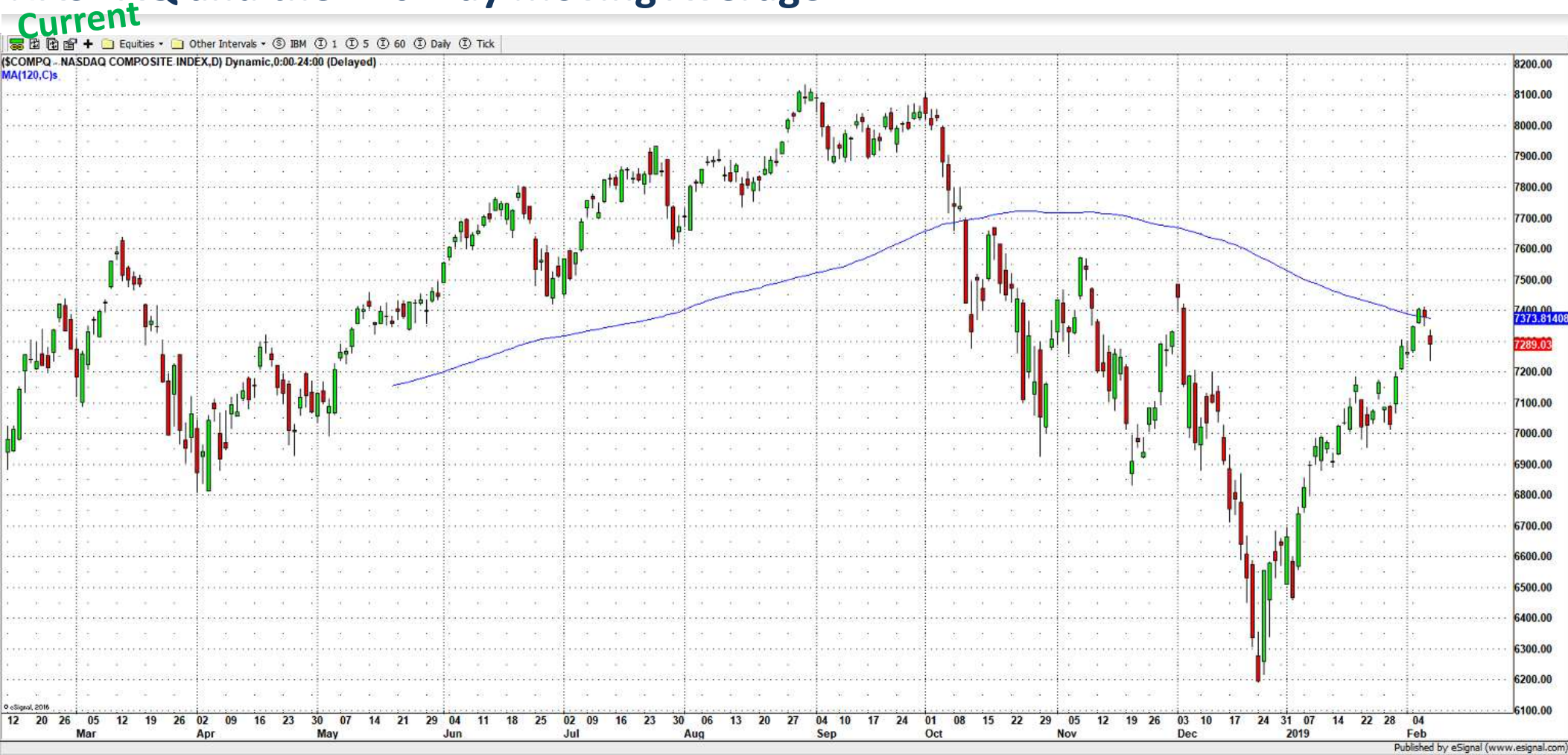


Equities

DJIA and the 120-Day Moving Average



NASDAQ and the 120-Day Moving Average



IPO Record Negative Earnings



Source: TopDownCharts Prestige Economics

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Does Your Dog Need a Podcast?



Does your dog need a podcast?

Jason Schenker on LinkedIn

July 9, 2017

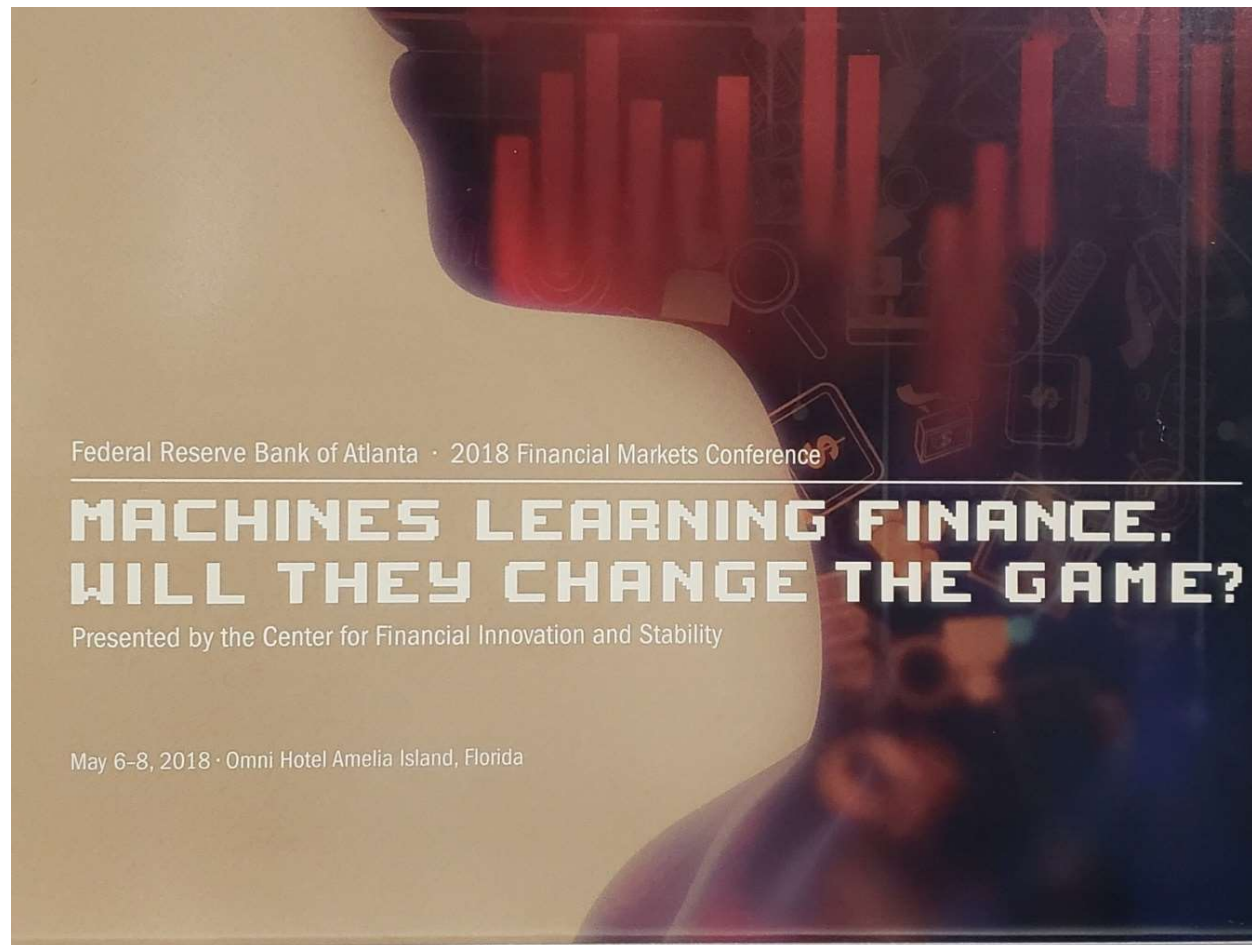
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122 clicks of your article

Are the Regulators Ready?



You Cannot be Ignorant of Technology



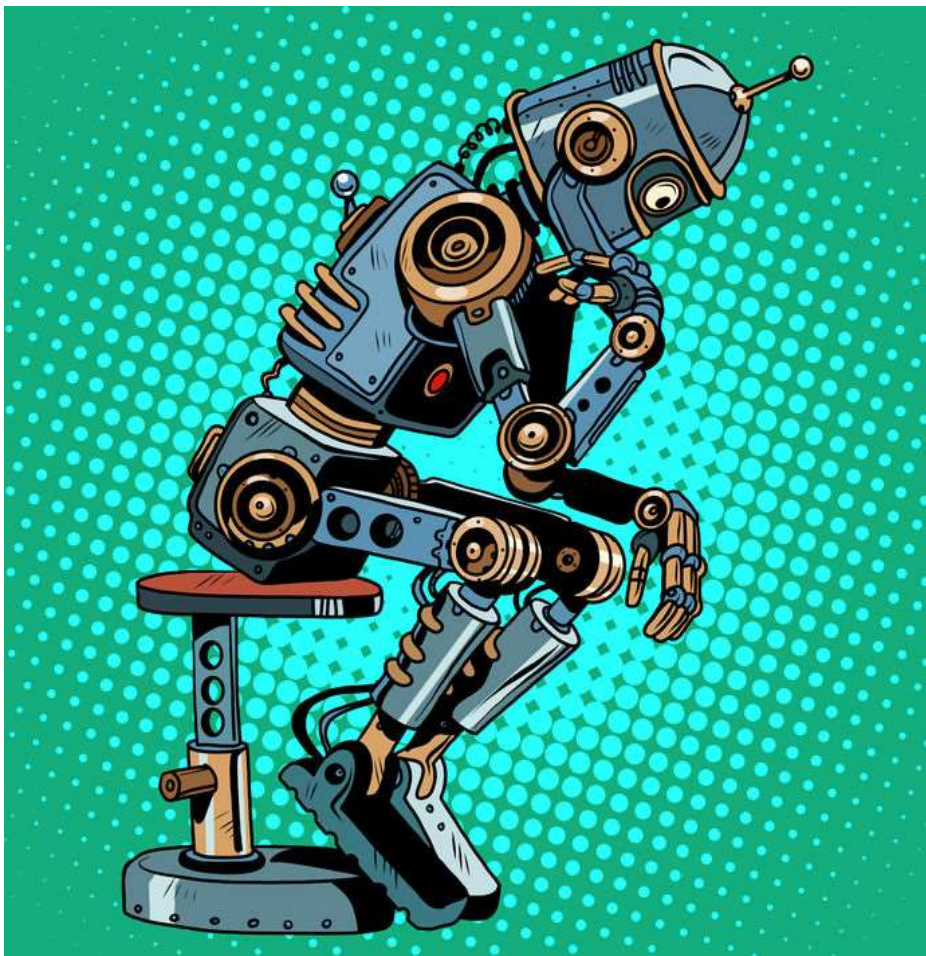
New Technology Impacts for Electronics

① Internet of Things and Sensors



2

Machine Learning and AI



3

Blockchain



4

Marking Goods



5

3D Printing



6

Drones



7

Self-Driving Cars



Alea iacta est

To Survive and Thrive in Disruption

Every Company Must be a Tech Company

For Individuals to Survive and Thrive in Disruption

Every Individual Needs to Lever Modern Technology

Source: The Futurist Institute, Prestige Economics

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