Catalyst Strategic Solutions Financial Symposium

July 25, 2019

The Housing & US Economic Outlook

Bernard Baumohl
Chief Global Economist

The Economic Outlook Group LLC
475 Wall Street
Princeton, New Jersey
(609) 529-1300

www.EconomicOutlookGroup.com

We are at a "Pivotal Moment" in US Economic History!

This record long economic expansion STILL has legs!

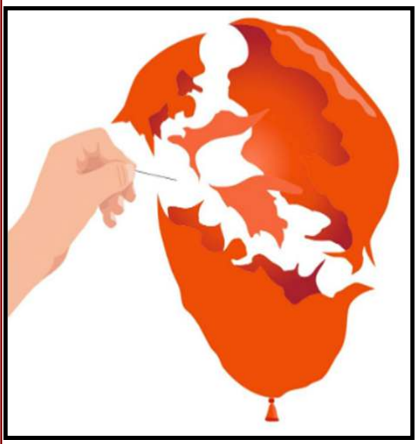
- US economy has begun its 11th year of growth for the first time in history…and it's still moving forward.
- Unemployment rate (3.7%) is lowest in nearly 50 years!
- Wages have improved. US consumers have ramped up spending.
- Inflation remains dormant!
- Ample capital looking for investments. Stock market at record high levels!
- Technological innovations continue to transform the very fabric of our economy and society.

Three most common causes of past recessions

1. High "real" interest rates. It shuts down borrowing and spending; delinquencies surge.
   (1953- 1954, 1957 - 1958, 1969 - 1970, 1981 - 1982)

2. A major geopolitical eruption that causes oil prices to jump. Higher energy costs brings economy to a screeching halt.
   (1973-1975, 1980)

3. Acts of human folly; Self-inflicted economic wounds.
   (2001, 2008- 2009)



What could puncture this economy?

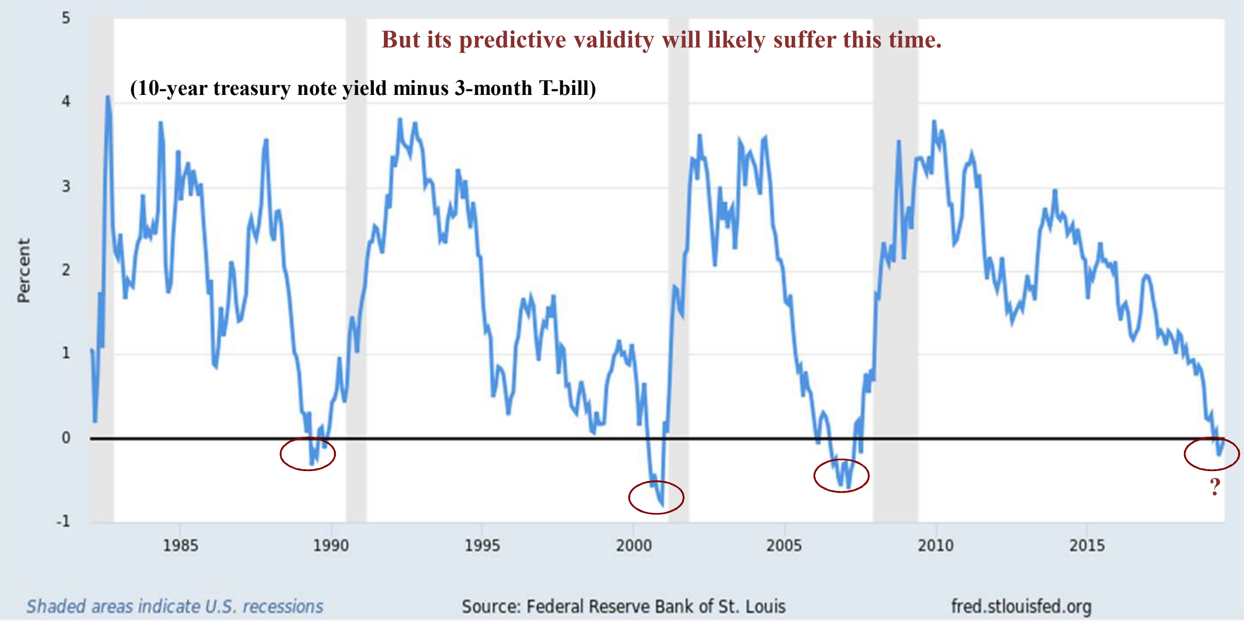
- Last G-20 meeting between Pres. Trump and Xi Jinping accomplished little. Will Trump soon raise tariffs on ALL Chinese imports? Are India, Vietnam and Europe next?

- Geopolitical threats are all flashing "RED."
  (Iran, North Korea, South China Sea, Venezuela, Libya, India/Pakistan)

- Investor appetite for US federal debt is not infinite! Funding $1 trillion a year to cover budget deficits and $22 trillion in debt will inevitably lead to higher i-rates.

- Threat of extreme political warfare as the 2020 presidential campaign gets underway. A polarized political climate may sap energy from an aging economic cycle.

"IS THE END NEAR?" An inverted yield curve has been a (near) perfect predictor of recessions.



Quantitative easing by world central banks have distorted bond markets.

The collapse in global rates caused a stampede into US gov't debt for its safety and positive yield!

Country	6-Mo	1-Year	2-Year	3-Year	4-Year	5-Year	6-Year	7-Year	8-Year	9-Year	10-Year	15-Year	30-Year
Switzerland	-0.75	-0.64	-0.89	-0.91	-0.89	-0.87	-0.79	-0.76	-0.69	-0.63	-0.52	-0.29	-0.01
Germany	-0.58	-0.68	-0.74	-0.76	-0.74	-0.68	-0.64	-0.58	-0.46	-0.40	-0.31	-0.10	0.27
Netherlands	-0.59		-0.72	-0.70	-0.64	-0.61	-0.50	-0.42	-0.32	-0.25	-0.15	-0.01	0.30
Japan	-0.13	-0.17	-0.20	-0.22	-0.23	-0.22	-0.22	-0.22	-0.21	-0.16	-0.12	0.07	0.36
Denmark	-0.66		-0.70	-0.70		-0.68			-0.45		-0.28		
Austria		-0.54	-0.65	-0.63	-0.57	-0.47	-0.39	-0.28	-0.22	-0.14	-0.03	0.31	0.70
Finland			-0.66	-0.63	-0.61	-0.54	-0.45		-0.19		-0.01		0.56
Sweden	-0.40		-0.62			-0.55		-0.26			-0.01	0.18	
France	-0.59	-0.60	-0.68	-0.66	-0.62	-0.53	-0.41	-0.31	-0.21	-0.10	0.02	0.38	1.15
Belgium	-0.57	-0.58	-0.60	-0.66	-0.60	-0.54	-0.42	-0.25	-0.14	-0.06	0.09	0.40	
Slovakia		-0.33				-0.24	-0.50		0.00	0.18	0.26		
Ireland	-0.41	-0.55	-0.45		-0.46	-0.39	-0.24	-0.14	0.45		0.22	0.58	1.16
Slovenia		-0.48	-0.30			-0.31		-0.14			0.25		
Spain	-0.41	-0.39	-0.40	-0.34	-0.27	-0.21	-0.06	0.08	0.20	0.29	0.43	0.80	1.47
Portugal	-0.38	-0.34	-0.37	-0.25	-0.17	-0.14	0.05	0.16	0.28	0.44	0.55	0.95	1.50
Malta	-0.23	-0.20		-0.10		0.02					0.74		
Bulgaria		-0.13		-0.01		0.05		0.37			0.58		
Italy	-0.16	-0.02	0.22	0.71	1.03	1.31	1.53	1.61	1.77	1.82	2.12	2.45	3.17
United States	2.19	2.03	1.81	1.75		1.78		1.89			2.03		2.52

Government yields as of June 21

$12 trillion in government bonds have negative yields.

$600 billion of investment grade bonds are also at negative yields.

There are even "junk bonds" in Europe that now trade with negative yields!

(At end of June 2019)

Our Baseline Forecast for U.S. GDP growth

Assumption 1. US - China talks lead nowhere 2019. But Trump refrains from another round in tariffs.

Sources: BEA, Office of Management & Budget; Federal Reserve, The Economic Outlook Group,

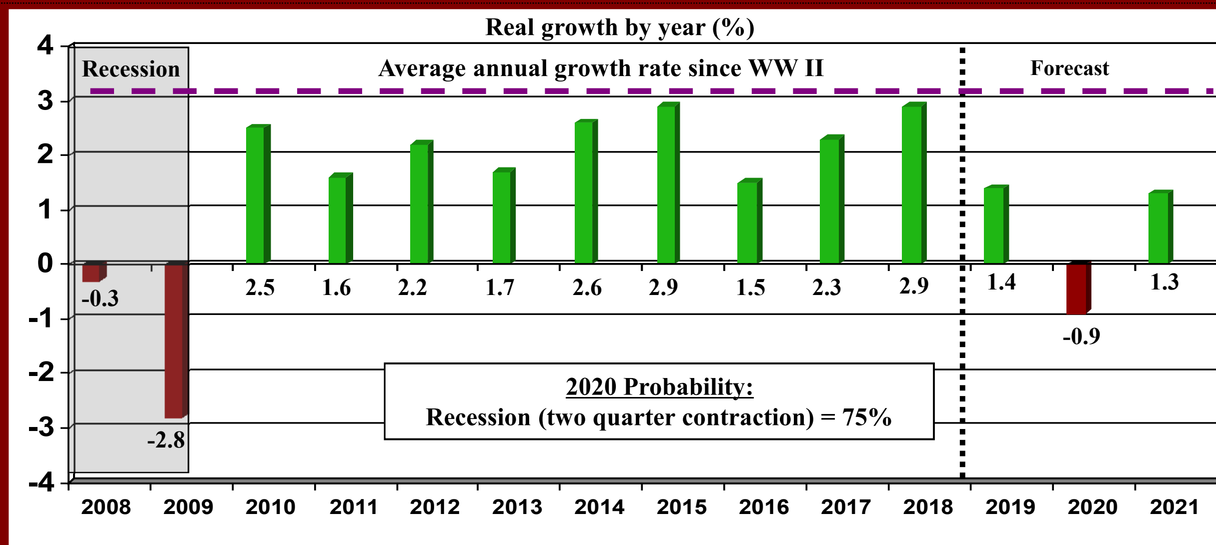
Forecast for U.S. GDP growth

Scenario 2: Trump carries out threat to impose 25% tariff on ALL Chinese imports.

Source: The Economic Outlook Group,

Forecast for U.S. GDP growth

Scenario 3: Trump hits China with more tariffs--PLUS--the US & Iran clash militarily



Source: The Economic Outlook Group,

It all comes down to the consumer: Spending to increase but at a moderate pace

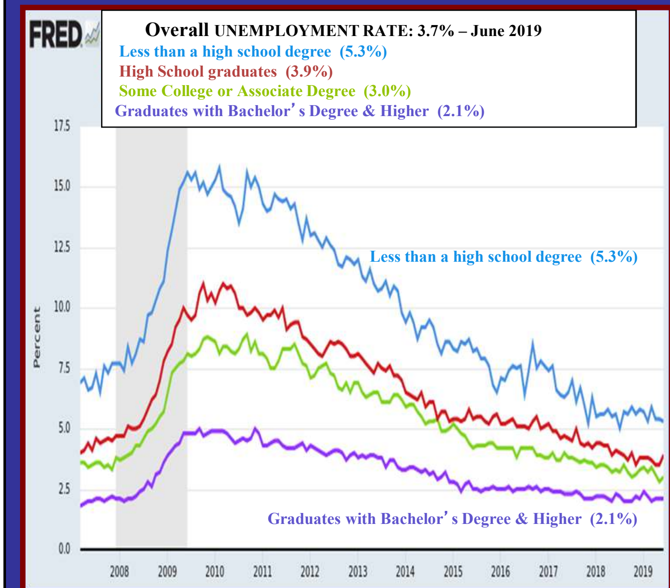
Factors that support household spending 2019 and 2020:

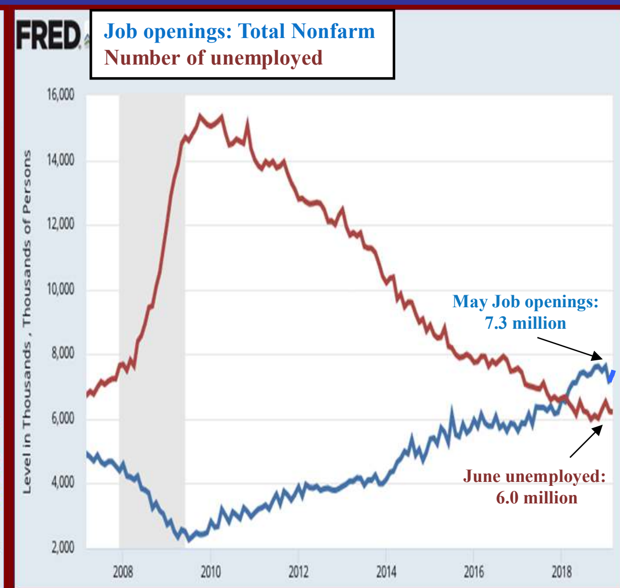
1. Robust job market.
2. Rising wages + minimal inflation = boost spending power.
3. Household net worth topped a record $$108.6 trillion in Q1 20019
4. Consumer confidence on the economic outlook still high.
5. eCommerce + digital payments + faster deliveries = more impulse buying.

Factors that will suppress growth in spending by 2nd half 2019:

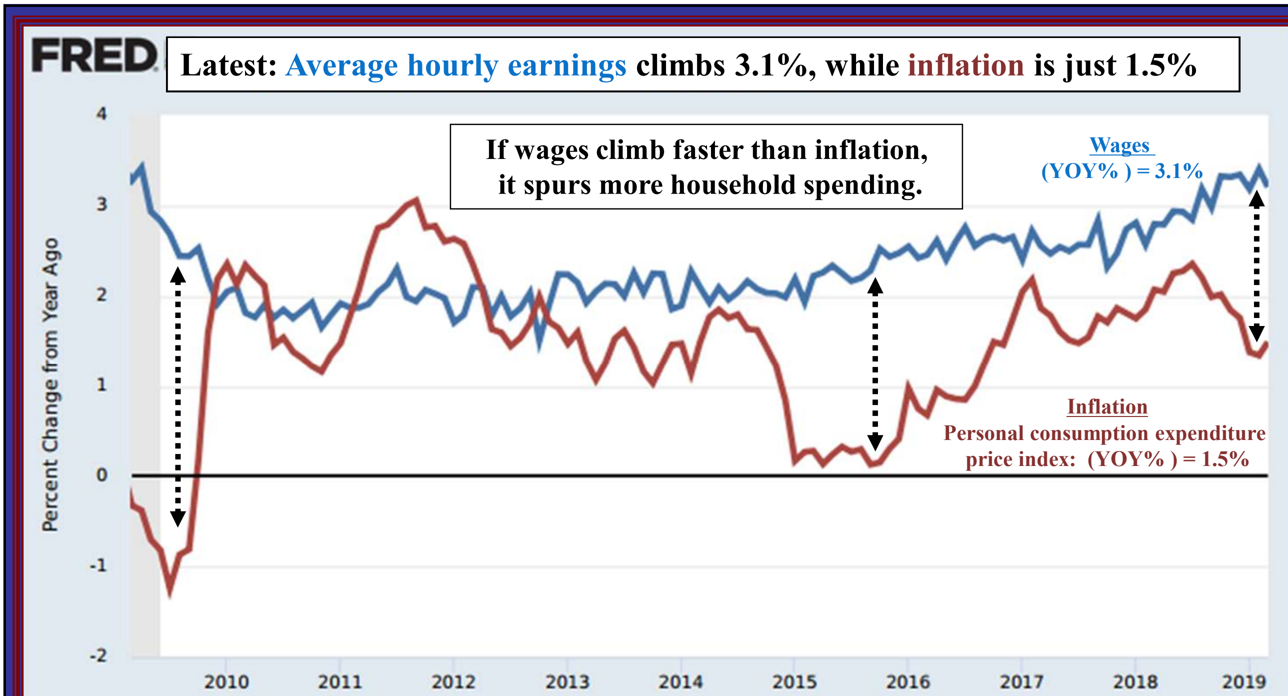
1. After 10 yrs. of shopping, consumer demand naturally wanes.
2. Interest rates have increased at a time of record household debt.
3. Banks and other lenders have tightened credit standards.
4. Demographic changes will alter the composition of spending.

Unemployment at historic lows; Yet job vacancies still greatly exceed those unemployed!





Source: Bureau of Labor Statistics



Source: Bureau of Labor Statistics

Historic tug-of-war over inflation:

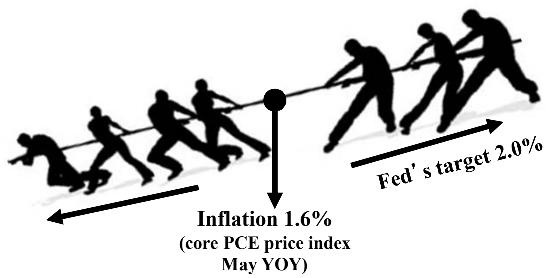
Outcome has implications for central banks, companies and consumers

Forces pushing inflation higher

- Rising wages
- Tariffs
- Firms testing pricing power

Forces depressing inflation

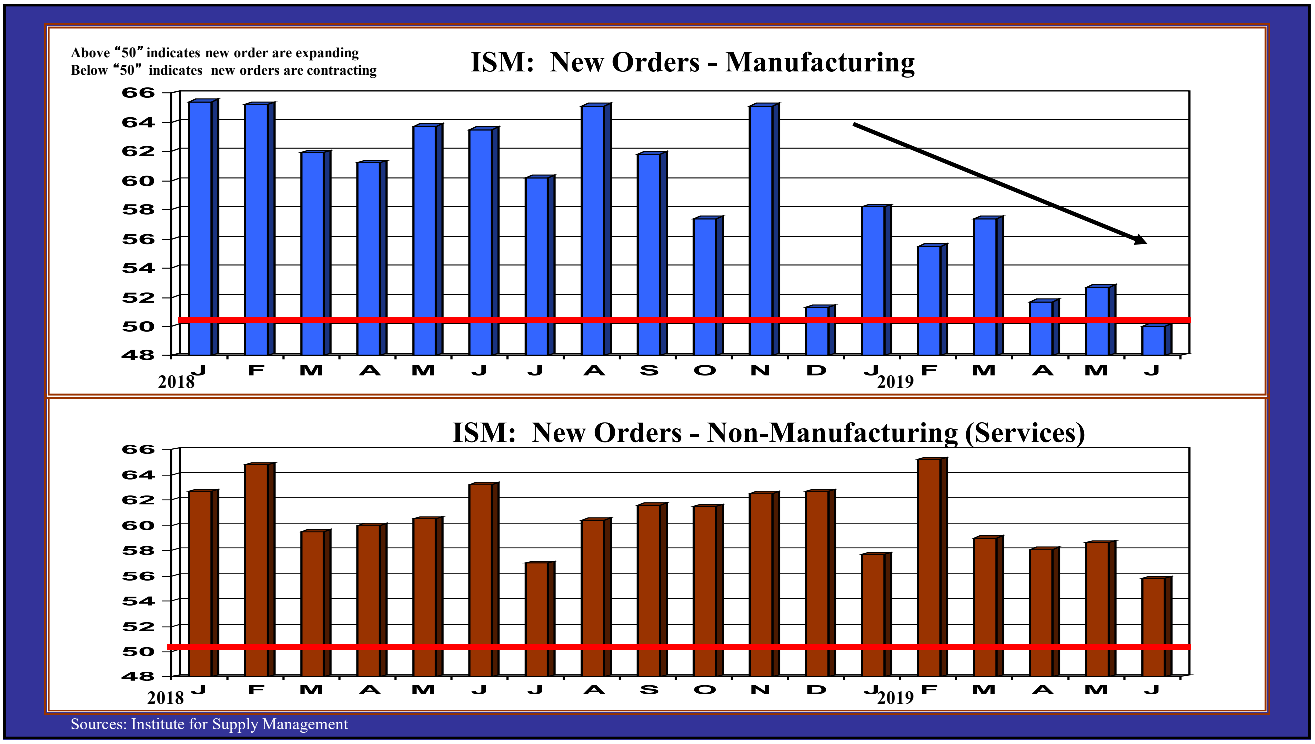
- eCommerce
- Globalization
- Stronger dollar
- Improved productivity
- Changing demographics
- Low interest rates
- Moderate energy prices
- Decline in union membership



Outlook for business spending turns sour:

There is ample capital available for investments…BUT political, economic and geopolitical uncertainties place such spending on hold.

-- Trade tensions has caused havoc with global supply chains and depressed world economic growth.
-- Corporate profits are under pressure due to rising labor costs, tariffs and limited pricing power.
-- Bank lending standards on C&I loans have recently tightened.
-- Scarcity of skilled labor has also held back new capital investments.
-- Another looming uncertainty: Will outcome of next presidential election reverse 2017 tax law?


Above "50" indicates new order are expanding
Below "50" indicates new orders are contracting
ISM: New Orders - Manufacturing
66
64
62
60
58
56
54
52
50
48
J F M A M J J A S O N D J F M A M J
2018
2019
ISM: New Orders - Non-Manufacturing (Services)
66
64
62
60
58
56
54
52
50
48
J F M A M J J A S O N D J F M A M J
2018
2019
Sources: Institute for Supply Management


Housing has been terribly sluggish --- despite low mortgage rates, strongest job market in 50 years and rising incomes!
FRED
• Total home sales (new & existing) are now below that of late 1990s --- even though we had 50 million fewer people then.
• Residential investment as a share of GDP is now at levels normally associated with recession!
Thousands
1,400
1,200
1,000
800
600
400
200
Percent
24.0
20.0
16.0
12.0
8.0
4.0
0.0
12%
740,000
800,000
8%
630,000
4.0%
New single family home sales
30-year fixed rate mortgage average
1975
1980
1985
1990
1995
2000
2005
2010
2015

You cannot have a vibrant economy without a healthy housing market!

Housing and the economy:

- Residential investment = 3% - 5% of GDP
- Consumer spending on housing = 12% - 13%

Total = 15% to 18% of US GDP

The Wealth effect:

- Housing wealth is about 25% of household net worth.
- Every $1 increase in home values raises household spending by 4 to 8 cents.

Total value of US housing market:

- $26 trillion market (mortgage debt + housing equity).

Sources: Urban Institute, Federal Reserve (housing wealth at market value)

Homebuilders confront a perfect storm!

Cost of building material has increased due to tariffs.
(Steel, aluminum, softwood lumber, plastic pipes, screws, bolts)

Severe shortage of skilled labor.

- Number of residential construction workers is down 20% from 2006.
- After the housing bust, many found more lucrative opportunities in the shale oil-related industry.
- One in four construction workers were immigrants. (Source: NAHB)

The burden of excessive government regulations:

- Local, state and federal requirements account for 25% of constructing cost of a home.

Scarcity of suitable land: Price of lots in preferred locations have skyrocketed.

- Builders moving out into “Xburbs” to construct more affordable homes.
- But high-end homes still provide greater margins for builders.

Homebuilder sentiment: July 2019 = All components (present, 6-month, traffic) are below year ago levels.

Housing demand has been lackluster!

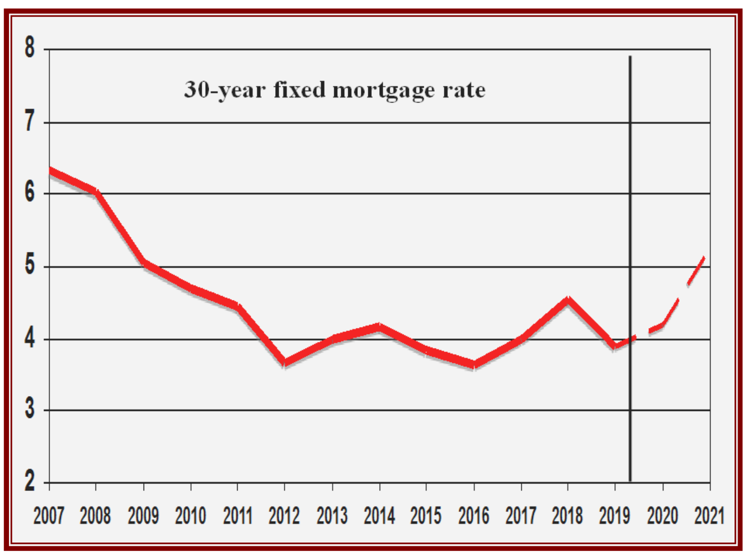
- **Household formation has slowed:**
  - --- aging demographics
  - --- birth rates are lowest in 30 years
  - --- severe curbs on immigration
  - --- US population growth now slowest in 80 years
  - --- Household formation to slow from 1.40 million (2018) to 1.22 million (2023)
- **Millennials and Gen Zs are more budget conscious.**
  - --- High college debt burdens (record $1.6 billion) have made renting more attractive
  - --- Pressure to build private savings because of doubts on solvency of SS and Medicare
  - --- Witnessed financial crisis: saw home values plummet and how friends/families declared bankruptcy
  - --- Uncertain about future economy given the trade war and fears of a global recession.
- **Provisions of the 2017 Tax Act raised the after-tax cost of homeownership**
- **Banks tightening lending standards given lateness in the credit cycle.**
- **Lack of affordable entry level homes:**
  - --- Large investment firms buying thousands of homes for rent; record numbers of flippers in the market.

Mortgage rates have been dropping, but they are projected to turn sharply higher the next two years.

- **Falling mortgage rates have spurred more refinancings than actual home purchases.**

  Reason?

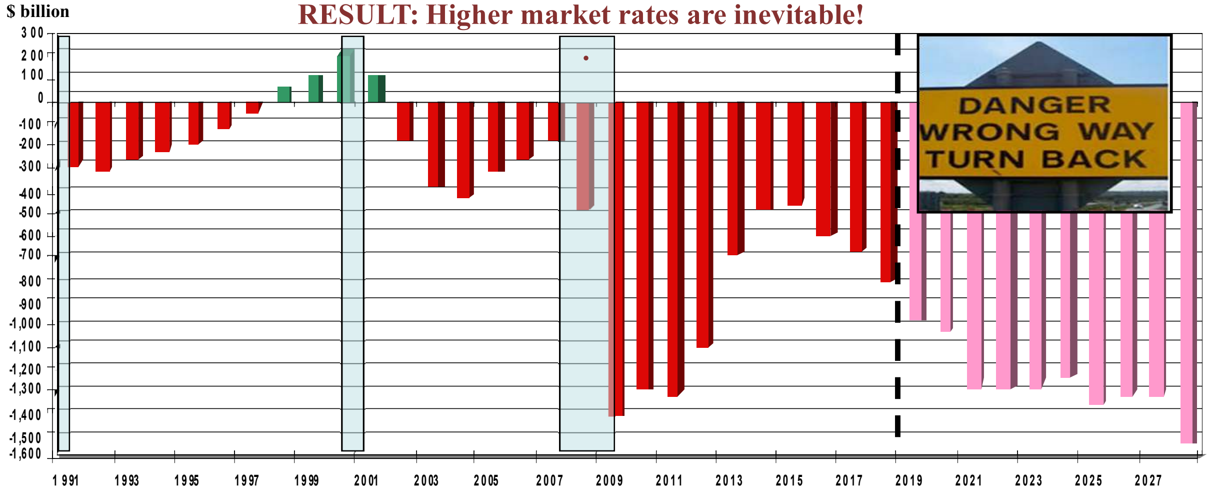
- **It's important to make a distinction between low mortgage rates at the end of a recession…and plunging rates caused by grave economic & geopolitical uncertainty.**
- **The <u>first</u> typically spurs a rebound in home buying; the <u>second</u> will not because it is fueled by anxiety and flight to safety in Treasury securities.**



Low treasury yields on notes and bonds are NOT sustainable!

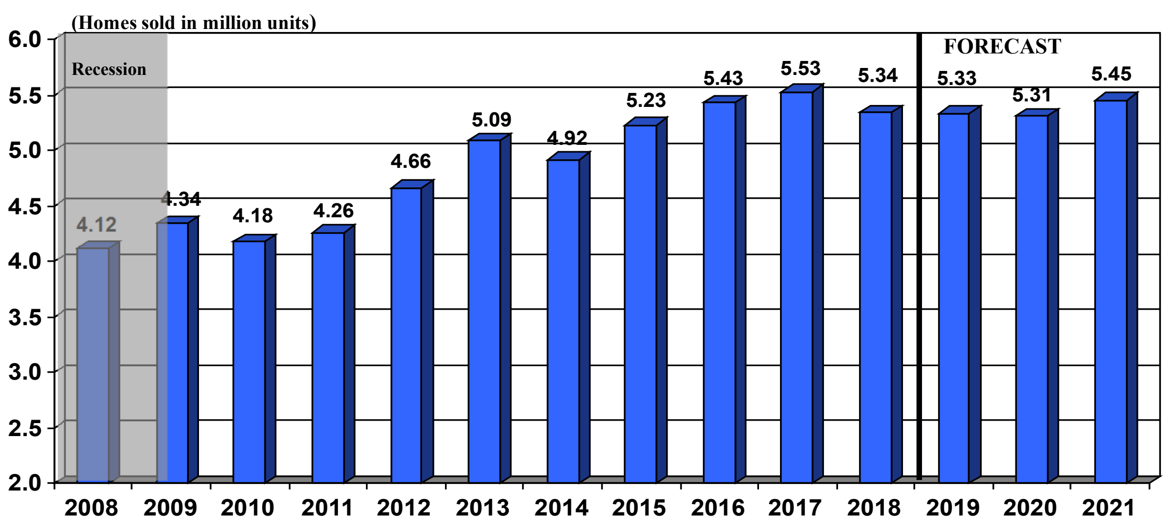
Investor appetite for US gov't debt will diminish as US budget deficits exceed $1 trillion/year.

RESULT: Higher market rates are inevitable!

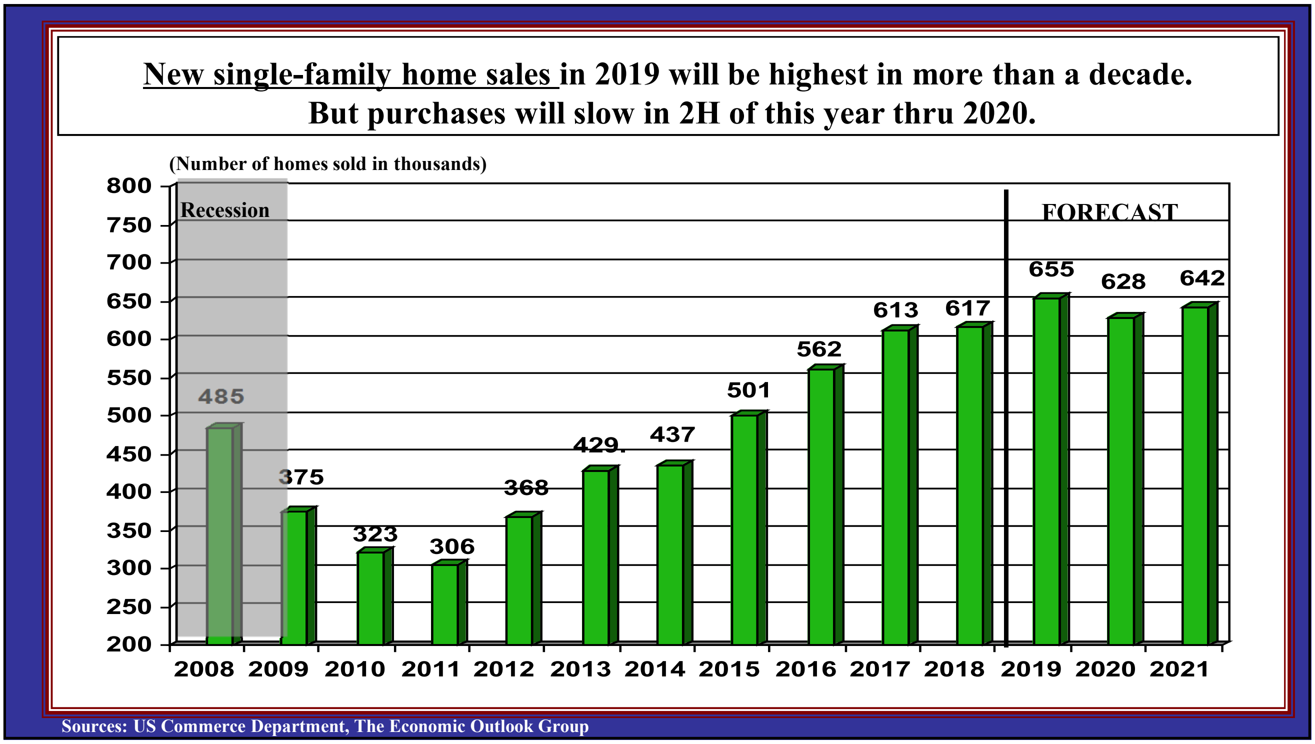


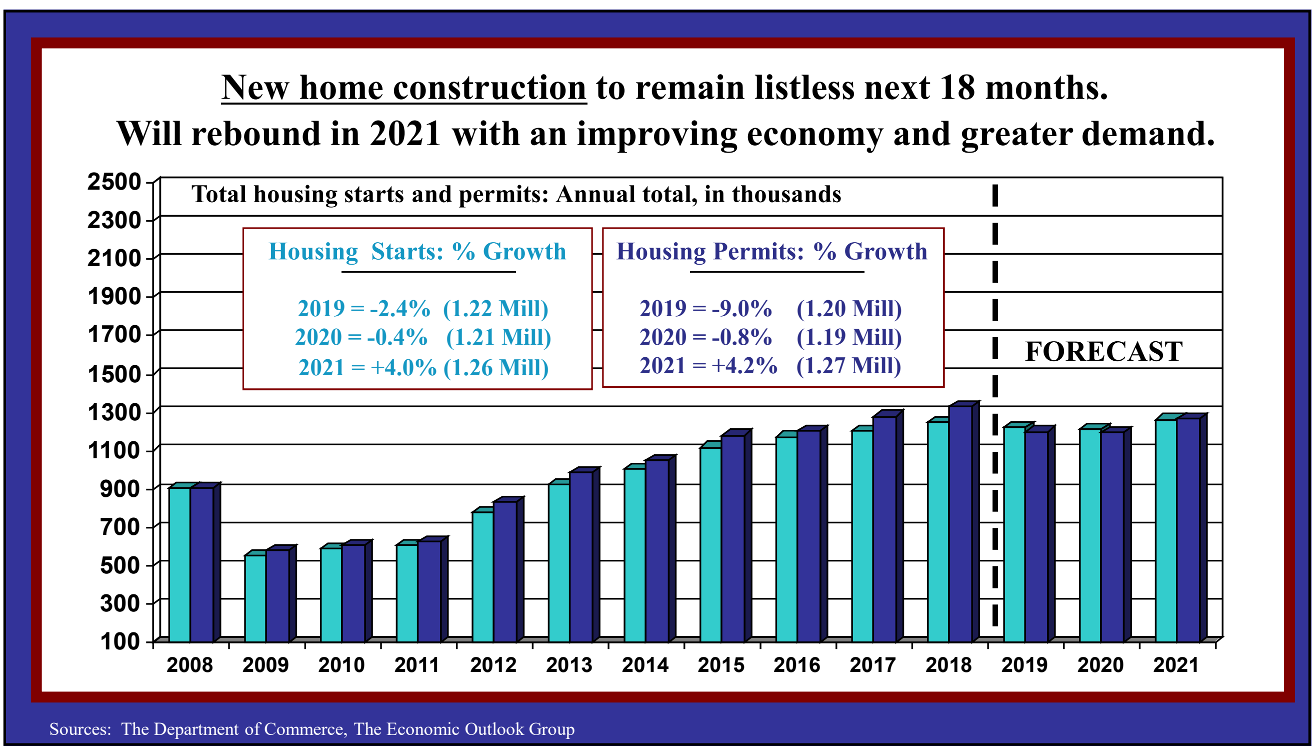
Sources: Congressional Budget Office, The Economic Outlook Group

US existing home sales: A weakening economy, trade tensions and scarce inventory will reduce the pace of home of purchase



Sources: National Association of Realtors, The Economic Outlook Group


New single-family home sales in 2019 will be highest in more than a decade.
But purchases will slow in 2H of this year thru 2020.
(Number of homes sold in thousands)
Recession
FORECAST
485
375
323
306
368
429.
437
501
562
613
617
655
628
642
800
750
700
650
600
550
500
450
400
350
300
250
200
2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021
Sources: US Commerce Department, The Economic Outlook Group


New home construction to remain listless next 18 months.
Will rebound in 2021 with an improving economy and greater demand.
Total housing starts and permits: Annual total, in thousands
Housing Starts: % Growth
2019 = -2.4% (1.22 Mill)
2020 = -0.4% (1.21 Mill)
2021 = +4.0% (1.26 Mill)
Housing Permits: % Growth
2019 = -9.0% (1.20 Mill)
2020 = -0.8% (1.19 Mill)
2021 = +4.2% (1.27 Mill)
FORECAST
2500
2300
2100
1900
1700
1500
1300
1100
900
700
500
300
100
2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021
Sources: The Department of Commerce, The Economic Outlook Group

Outlook for Fannie Mae and Freddie Mac

Don't expect major overhaul of the GSEs in the middle of a divisive presidential campaign.

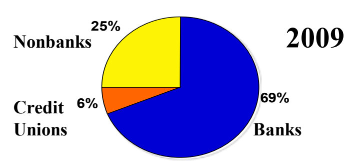
Fannie Mae & Freddie Mac are at the heart of housing finance.
- They back about about 50% of all mortgage securities;
- Since 2008 both have been under conservatorship after the housing market cratered.

WH & Congress have wrestled on how to end conservatorship:
- With the Treasury starved of cash, why rush to give up billions in dividends from GSE's
- 2017 tax changes have already significantly affected cost of home ownership.
- End to conservatorship will happen only after the 2020 presidential election.

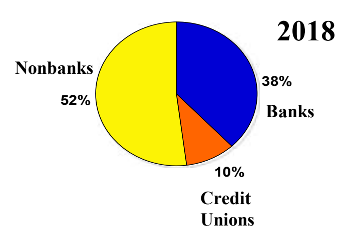
What's next for Fannie and Freddie's federal charter?
- US Treasury (Mnuchin) and most of Congress favor an explicit guarantee of GSEs debt securities.
  --- GSEs provide stability to the residential real estate market.
  --- Both GSEs are essential in supporting the popular 30-year fixed mortgage.
  --- Make mortgages more affordable to low and middle income groups.
- Focus now is on passable legislation to recapitalize and reprivatize Fannie and Freddie.

The growing presence of "shadow banks" in mortgage finance

- A decade after housing crashed, the more heavily regulated traditional banks have stepped away from mortgage lending.



- Nonbanks (Quicken Loans, LendingTree, PennyMac) have jumped in to capture 52% share of mortgage loans in 2018.



- There is also ample private capital jumping into home purchasing/mortgage debt markets to seek higher returns.
  (Insurance companies, private equity firms, REITs, hedge funds have ramped up investing in residential real estate.)

Sources: Mortgage Bankers Association, Urban Institute,

So…what could possibly go wrong?

Biggest hazards on the radar screen

Risk Level

Moderate: **2020 presidential campaign deeply intensifies divisions in the US.**

- A highly contentious political climate becomes a headwind to economic growth.
- Uncertain election outcome may delay biz investments and stall consumer spending.

Moderate: **US economy confronts a full blown global trade war.**

- Trade talks w/China collapse; US threatens more tariffs on Europe, India, Vietnam.
- Volume of world trade shrinks. Global economy enters recession.

HIGH: **Exogenous shocks pose the greatest threat to the economy.**

(1) Foreign government launches cyber attack that paralyzes parts of the US economy.
(2) US and China clash militarily in South China Sea.
(3) Iran pursues uranium enrichment above 20%. US or Israel's military strikes back.
(4) Venezuela: a major flashpoint between the U.S. and Russia.

We are now in the midst of a Cyber World War!

Russia and China view CYBER warfare as an *ideal weapon* against the US!

- **It's cheaper, can do major damage, is contact-free warfare…and allows for deniability.**
- **For a fraction of the price of a MIG-29, Russia, China & North Korean hackers can sabotage US electrical grids, nuclear plants, communication networks and financial markets.**

Foreign Attacks on the Government

Hackers successfully penetrated the US electrical grid & nuclear plants (2018)
US election facilities and voter records were penetrated by Russia (2016, 2018)
Ukraine's power grid went down in winter due to a dispute with Russia (2015)
Foreign hackers stole 22 million accounts from US Government Office of Personnel Management (2012-14)

Theft of consumer ID:

Marriott International (Starwood) - 500 million guest accounts (2014 - 2018)
Equifax - 143 million consumer records (2017)
Yahoo - 3.5 billion household accounts (2016 – 2017)

Source: Multiple sources

United States

Baseline Forecast: 2019 - 2021

	I 2018	II 2018	III 2018	IV 2018	I 2019	II 2019	III 2019	IV 2019	I 2020	II 2020	III 2020	IV 2020	I 2021	II 2021	III 2021	IV 2021
Real Gross Domestic Product (GDP):																
%	2.2	4.2	3.4	2.2	3.1	1.6	1.9	2.0	1.3	2.0	1.8	2.0	2.2	2.4	2.5	2.5
Personal Consumption Expenditures:																
PCE %	0.5	3.8	3.5	2.5	0.9	1.7	1.3	1.9	1.2	1.9	1.7	2.0	2.0	2.7	2.8	3.1
Inflation, end of period, year-over-year:																
CPI %	2.4	2.9	2.3	1.9	1.9	1.6	2.1	2.3	2.2	2.0	2.0	2.2	2.5	2.7	2.7	3.7
Unemployment Rate (end of period):																
%	4.1	4.0	3.7	3.9	3.8	3.7	3.6	3.5	3.8	3.9	4.0	4.2	4.1	4.0	4.0	3.9
Non-farm Payrolls, monthly avg. thousand:																
	228	243	189	233	174	171	165	155	125	115	105	100	115	125	155	165
Treasury 10-yr Note Yield % (end of period):																
	2.74	2.85	3.06	2.76	2.42	2.00	2.30	2.20	2.15	2.35	2.45	2.85	3.20	3.50	4.10	4.40
Federal funds rate % (end of period):																
	1.63	1.88	2.13	2.38	2.38	2.38	2.13	1.88	1.88	1.88	1.88	1.88	2.13	2.38	2.63	2.63

The Economic Outlook Group LLC

BERNARD BAUMOHL
CHIEF GLOBAL ECONOMIST
475 WALL STREET
PRINCETON, NEW JERSEY
(609) 529-1300

www.EconomicOutlookGroup.com

Exogenous shocks will become more common…and more consequential! How to prepare for such scenarios?

1. **Companies should undertake "rigorous" stress tests to determine their greatest vulnerabilities.**
   - Conduct "what if" scenarios: Introduce adverse hypothetical scenarios (e.g. systemic power failure or events that can disrupt operations, revenue flow, access to the internet & intranet and block credit lines.)
   - How to cope under such dire circumstances and remain both operational and profitable?

2. **Consider cyber theft insurance, upgrade software, and finally hire firms to hack into your system.**
   - Average time it takes a U.S. firm to identify a breach = 201 days
   - Average time it takes to contain the breach = 70 days
   - Average cost of a single data breach = more than $4 million (Source: IBM)

3. **Geopolitical threat anticipation:**
   - Dedicate a risk management team to engage in geopolitical forecasting, especially where one has foreign exposure (e.g., supply chain sources, key investors, real estate assets, banking relationships.)

4. **Be proactive. Customers demand reliability of service --- or they'll walk! Focus on being agile.**
   - Prepare in advance a governance plan that can quickly be implemented to mitigate any harmful fallout from a decline in economic activity OR an external shock. *Your firm's reputation is always at risk.*

Trade talks have resumed after G-20.

But Trump and Xi are as far apart as ever.

Both have blundered into a minefield of tariffs, retaliation and other provocations. Who will cave in?

The US does have legitimate grievances:

Goal: Get China to codify a new trading relationship with the US.

- Protect US intellectual property.
- End forced joint ventures & transfer of proprietary technology.
- Gain more access to China's domestic market.
- China to curb subsidies to key domestic industries.
- End its cyber warfare against US firms & military.

China's top priority: **Maintain domestic economic & political stability --- at all costs!**

- Avoid codifying trade reforms into law; emphasize agreements as memorandums of understandings.
- Seek immediate rollback of punitive US tariffs once a deal is made.
- If all else fails, stall, bob & weave and offer minimal concessions until after US elections.

Factors that will determine how US - China talks eventually play out.

1. Is there sufficient political cohesion in the White House for a protracted trade war?

With the 2020 election looming and no resolution on trade in sight, will China hawks (Lighthizer and Navarro) still have the full support of President Trump?

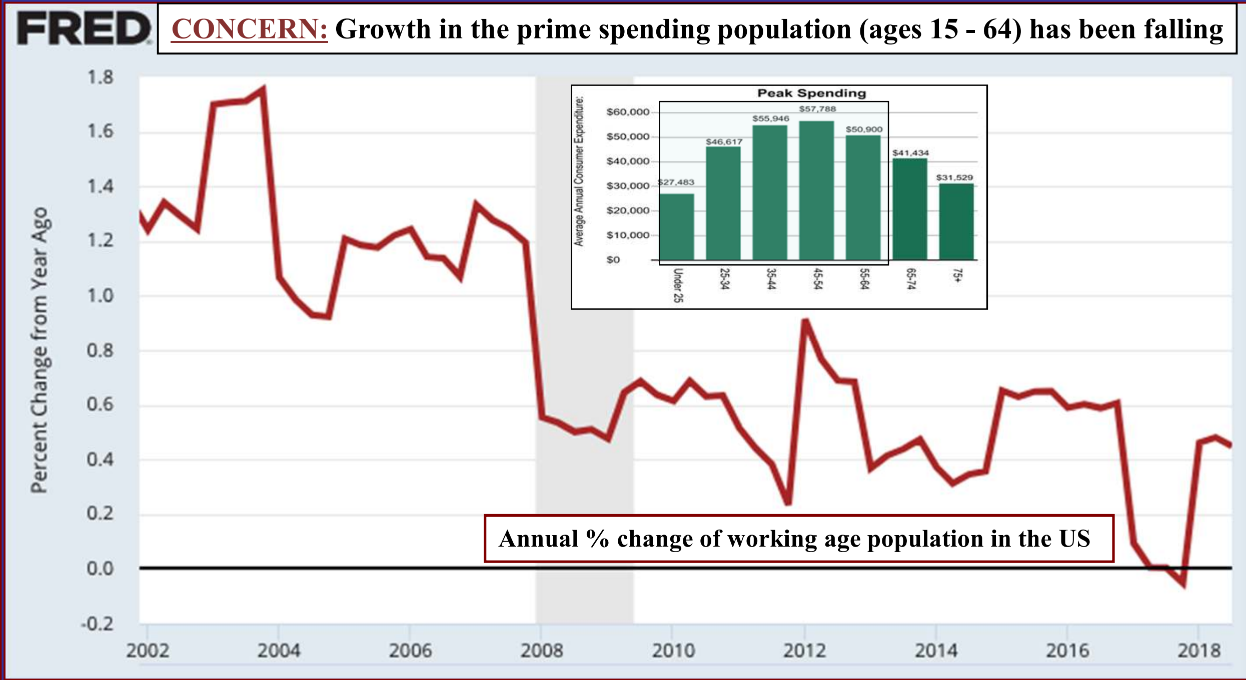
2. Does China's Xi Jinping have the full support of the Politburo?

Xi is the supreme leader…but he still needs to navigate between Communist Party hardliners and those who seek more market-oriented reforms. Several of China's key policymakers are US trained economists. China to celebrate 70th anniversary of PRC's founding in October.

3. Will China use other extreme tools to withstand US pressure?

- Allow yuan to depreciate vs. US dollar / Scale back net new purchases of US treasuries
- Permit shadow banks to resume lending to private firms
- Slash interest rates
- Impose new hardships on US firms operating in China
- Boycott purchases of US goods
- Ignore US sanctions against North Korea and Iran
- Take tougher actions in SCS and against Taiwan

CONCERN: Growth in the prime spending population (ages 15 - 64) has been falling



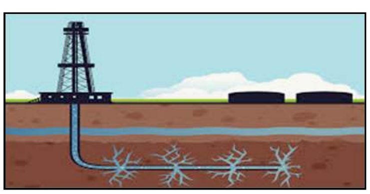
Sources: Federal Reserve; Census Bureau

Forecasting energy prices is NOT a respectable human activity!!

The oil market is always subject to powerful cross currents.

NEW SUPPLIES:

- **U.S. is now the world's largest oil producer (12.3 million bbl/day).**
- **American oil exports surges to a record 3.6 million bbl/day.**
- **Shale oil mining soon to spread to Latin America and Sub-Saharan Africa.**



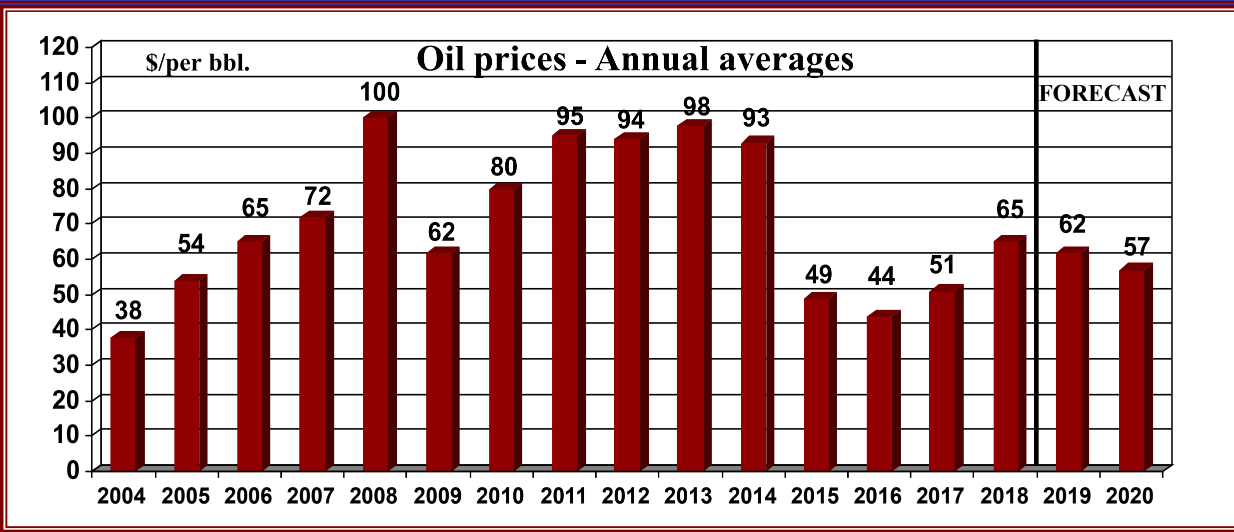
BUT…

- **OPEC w/ Russia continue to curb output. Their June meeting will determine oil policy for rest of year.**
- **Political turmoil and/or sanctions in Venezuela, Libya, Nigeria, & Iran have reduced oil supplies.**
- **Major offset: Companies are also investing more on renewable energy to power their operations.**

Sources: US Energy Information Administration, The Economic Outlook Group

Outlook for WTI oil: $55 - $70 bbl next two years

However add another $5 to $15 premium when geopolitical tensions increase



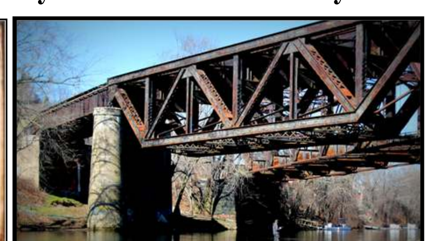
Sources: US Energy Information Administration, The Economic Outlook Group

Decrepit infrastructure holds back economic growth:

But money and politics (again) get in the way of much-needed repairs.

EXAMPLES:

- **Philadelphia relies on underground pipes installed *before* the Civil War.**
- **84,000 bridges considered functionally obsolete.**
- **58,000 bridges deemed "structurally deficient," yet still carry 180 million cars a day!**



- **There are more than 650 water main breaks a day on average in the US; 240,000 a year.**
- **Leakages and spills waste an average of 5.8 billion gallons of water *each day!***

Sources: American Society of Civil Engineers, American Water Works Association, Center for Neighborhood Technology

Bernard Baumohl, Chief Global Economist

Risks to housing from shadow banks…

What happens if the economy sours?

- **They are not subject to a national regulator (though monitored by states and CPFB)**
  Risk: These firms have smaller capital cushion against potential losses.

- **Nonbank mortgage lenders have been aggressively competing for borrowers.**
  Risk: Fierce competition may lead to less underwriting discipline. Déjà vu?

- **Private investment firms provide liquidity to residential real estate market.**
  Risk: But this liquidity will quickly disappear at the mere whiff of a recession…
  or if more lucrative returns are available outside of residential real estate.