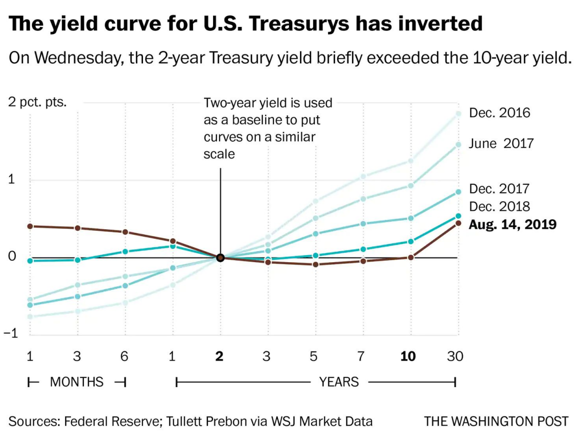
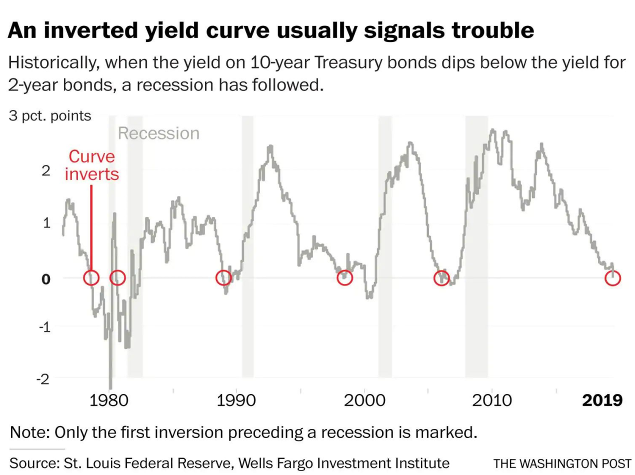
- **What is a recession?**
    - The loose definition of recession is two straight quarters of declines in real GDP but the official declaration comes from the National Bureau of Economic Research (NBER), a private organization of economists, which determines a recession occurs when there is “a significant decline in economic activity” that lasts more than “a few months”.
        - The NBER declares a recession retroactively, though. For instance, it didn’t confirm the Great Recession until November 2008, 11 months after it had begun.
    - Recessions are also partially a mass psychology phenomenon. If we all think there will be a recession, everyone produces a bit less in anticipation of lower demand. Lower production is the recession.
    - Since about the 1980s, with the exception of the Great Recession, business cycle fluctuations have been a lot less volatile. The ups haven’t been as up, and the downs haven’t been as down. Recessions aren’t as drastic, but periods of growth that make up for them aren’t as great, either.
- **Indicators of a recession**
    - The inverted yield curve.
        - When the yield on the 10-year Treasury bond sinks below the yield on the two-year bond.
        - Right now the yield curve is inverted, meaning that the market thinks future interest rates will be lower than they are today. It’s a reflection of how investors feel about the economy’s future.
        - An inverted yield curve appears when short-term investments pay more than long-term ones, and it generally reflects a pessimistic mood among investors about the economy’s future performance. When the yield curve stays inverted for three months, as it did earlier this year, it’s a sign of a possible upcoming recession.
        - The yield curve has inverted before every US recession since 1955.
        - The time from inversion to onset of a recession is long and variable. It usually ranges from 10 months to 36 months.
        - Looking at yield curves, the New York Fed now puts the probability of a recession by July 2020 at 31.5%.



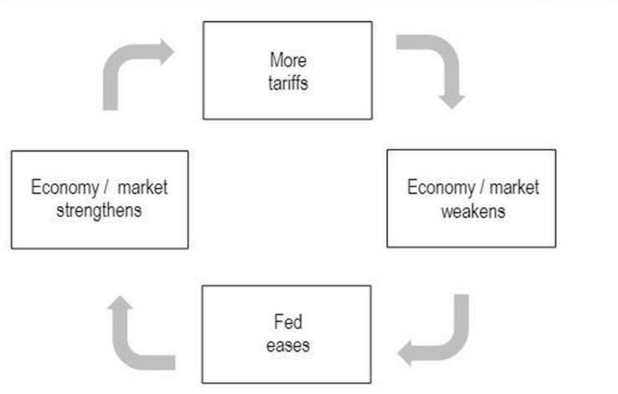


- The Challenger layoff survey is up 35% year-to-date from 2018, in large part from the auto industry.
- Either a spike in jobless claims or an increase in the overall unemployment rate.
  - The initial jobless claims number is a good metric because it is released every Thursday morning and is a high-frequency datapoint that can indicate whether companies are starting to lay off workers.
  - Unemployment is considered a “lagging” indicator, and it is unlikely to be the first place to pick up on signs of trouble. But what it lacks in timeliness, it makes up for in reliability. The unemployment rate pretty much always spikes in a recession, and it rarely rises much without one.
    - Unemployment is currently trending down. When that has been the case historically, there has been less than a one in 10 chance of a recession within a year, according to a Brookings Institution analysis.
- A three month average of non-farm employment gains fall significantly.
- The ISM Manufacturing Index falling below about 45 for an extended period.
  - Every month, the Institute for Supply Management surveys purchasing managers at major manufacturers about their companies’ orders, inventories, hiring and other activity. It then aggregates those responses into an index: Readings above 50 indicates that the manufacturing sector is growing; below 50, it is contracting.
  - The manufacturing index has its advantages, in that it is released early, often on the first day of the subsequent month, and unlike a lot of economic data, it doesn’t get revised.
  - However, manufacturing no longer drives the US economy which means contractions in this sector doesn’t guarantee a recession. For example, the American auto industry has technically been in a recession for months.
- The National Bureau of Economic Research (NBER) considers the following economic measures when determining a recession:
  - Employees on non-farm payrolls
  - Personal income minus transfer payments
  - Industrial production
  - Manufacturing and trade sales
- Based on National Bureau of Economic Research numbers, the average trough to trough direction is 70 months, or about six years. It’s been almost 12 years since the last trough. (Troughs are the low point of a recession. Recessions occur between peaks and troughs.)
- Consumer spending and retail sales numbers are a good indicator of consumer confidence and willing to spend rather than save.
  - Consumer spending accounts for close to 68% of US GDP.

- Morgan Stanley has suggested a 15% year-over-year drop in the Conference Board's Consumer Confidence index is a reliable predictor of a recession.
  - Their US consumer confidence indicator is currently up 11.4 pts.
- However, the preliminary results for the University of Michigan's consumer confidence survey shows a 6.3 pt drop from last month and a 4.3% y-y fall.

- **The Trade War**
  - On July 5th, the Trump administration imposed 25% tariffs on $34 billion worth of Chinese goods, including electronics, aircraft parts, and medical devices.China responded by imposing 25% tariffs on $34 billion worth of US goods, including soybeans, automobiles, and lobsters.
  - At the start of the month, Donald Trump announced he would put a 10% tariff on $300 billion of Chinese goods, and China retaliated by stopping buying agricultural goods from the US and allowing its currency to weaken.
  - On Friday (8/23) Donald Trump announced that in response to the $75 billion in tariffs that China just imposed on the US, starting October 1, the existing 25% tariffs on $250 billion in chinese goods would rise to 30%, and the 10% tariffs on $300 billion in Chinese goods set to begin in September 1 will be 15%.
    - ZeroHedge, "And now we await China's retaliation as Beijing has no choice but to retaliate again in tit-for-tat fashion, and is likely to hike the rate on its own tariffs targeting US goods, which will then prompt Trump to raise tariffs even more, at which point China will retaliate in kind, until eventually all trade between the US and China grinds to a halt, at which point the question is which country will succumb to recession and/or social unrest first?"

Chart 1: Adverse feedback loop between the Fed and trade policy



Source: BofA Merrill Lynch Global Research

  - How The US-China Trade War Turned Into A Currency War
    - On August 5th, the Trump administration labeled China a currency manipulator after China allowed the value of its currency to fall. The designation - which the US last used against China in 1994 - is more a symbolic move than a substantive one.
      - "The trade war has now become a currency war," said C. Fred Bergsten, the director emeritus of the Peterson Institute for International Economics.
    - What is currency manipulation?

            - When the value of the dollar is strong, Americans have more purchasing power abroad, but American exports are also relatively expensive for other countries to purchase. When the dollar is weaker, it buys fewer imported goods but makes American exports relatively cheaper for foreign buyers, which spurs exports.
            - Some countries try to purposely weaken their currencies to lift exports. China has held down the value of their currency in the past to speed its economic value and become a factory to the world.
            - A cheaper Chinese currency helps Beijing offset much of the pain of American tariffs, which otherwise would make Chinese goods considerably more expensive in the US.
            - Twice a year, the Treasury Department puts out a report that analyzes whether countries are manipulating their currencies. In the most recent report in May, the department criticized China's practices but said China met only one of several criteria for determining whether a country was a manipulator.
        - China's control over its currency
            - The US and many other developed countries let the market determine the value of their currencies, with indirect central influence (ex. When the Fed raises or lowers interest rates)
            - China, however, manages its currency more actively. Officials set a daily benchmark exchange rate for the renminbi, but allow traders to push the value up or down within a set range. Officials then use that trading activity to help determine the next day's exchange rate.
            - The Chinese government has turned to its vast foreign exchange reserves, accumulated through years of China's exporting surplus. Beijing has used those dollars to purchase renminbi and prop up its value. Recently, however, China has let the renminbi fall to the lowest level in over a decade.
    - According to Carl Quintanilla of CNBC, "The Trump administration figured they could disrupt world trade and get away with it, since our economy is one of the least reliant on trade ...They believe it will hurt China more than the US. What they may have underestimated was the behavioral economics of capital deployment - the degree to which businesses and households get spooked from erratic policy change.
- **Indicators that may no longer prove reliable.**
    - **Exports** used to be a good measure of activity. They are measured frequently and accurately. But recent trade wars create drops in exports that might not reflect fading health of companies.
    - **Housing starts** (a term for the number of new privately-owned housing units permitted or constructed) have been a very reliable indicator in the past. But big

changes in the housing market and the way in which houses are financed make today's housing numbers an imperfect comparison to the past.
  - **Industrial production** is another monthly measure that is accurately measured, however, industrial production is becoming a smaller and smaller part of our economy.
  - *However, all three of these economic indicators are currently flat or falling.
- **Current economic numbers**
  - Markets fell after Donald Trump said US companies are "hereby ordered" to find an alternative to doing business with China following Beijing's latest tariff increase on $75 billion of US goods.
  - The Dow Jones industrials sank 2.4%, the S&P 500 fell 2.6% and the Nasdaq dropped 3% on Friday (8/23). Bond prices soared, sending yields lower. The yield on the 10 year Treasury fell to 1.52%
  - The US has now added jobs for 106 months in a row, the longest streak on record. The unemployment rate, at 3.7%, is close to its lowest record level of 3.6% in 1969.
  - The pace of jobs growth is slowing. Employers added 165,000 jobs a month on average over the first seven months of 2019, down from an average of 223,000 a month in 2018.
  - The US, the world's largest economy, accounts for about a quarter of global GDP. Last quarter, US GDP slowed to 2.1%, down from 3.1% in the first three months of 2019 and below 2018's 2.9% growth.
  - Household debt continues to rise with mortgage debt currently higher than it was at the peak debt level of 2008.
    - Mortgage balances - the largest component of household debt - rose by $162 billion in the second quarter to $9.4 trillion, just higher than the previous high of $9.3 trillion from third quarter 2008.
    - Non-housing balances increased by $37 billion in the second quarter, with a $17 billion increase in auto loan balances and a $20 billion increase in credit card balances offsetting an $8 billion decline in student loan balances.
- **What happens in a recession and possible outcomes from a recession in the near future.**
  - Not including the Great Recession, recessions since the end of WWII have lasted 6-16 months, averaging 10.4 months. (the Great Recession lasted 18 months)
  - Jobs:
    - During a recession, jobs disappear. The largest monthly decline in employment in the last 10 recessions (excluding the Great Recession) was 2.6% on average.
    - The biggest losses are usually in manufacturing and related industries. Sectors that rely on on more discretionary spending also lose significant jobs. Employment in financial industries shrink too because businesses and individuals borrow less.

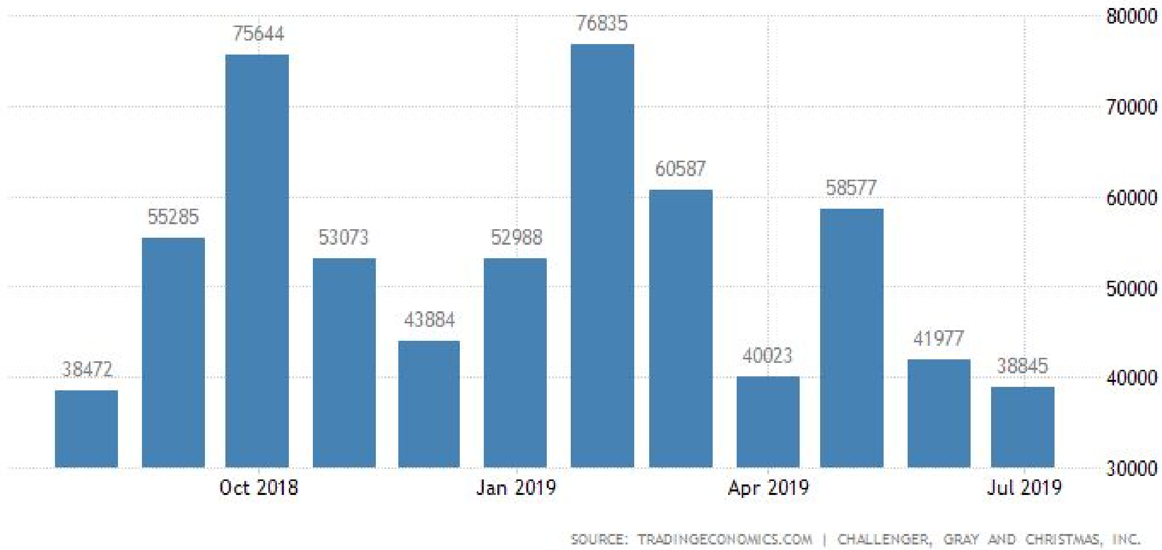
        - Jobs that feel the effects of a recession less include: health care, professional services like legal and accounting, government, and education.
    - Stocks:
        - While stocks tank during a recession, they bounce back quicker. Typically, the stock market begins to fall from its peak months before the actual recession starts. It also starts to recover before the recession technically ends.
            - The recession that followed the dot-com bubble started in March 2001, but stocks had already peaked 14 months prior. The Dow fell 11% before the recession began and bottomed at a 30% decline in September 2001. The recession didn't end until November 2001, at which point the Dow had rallied 20%.
    - The Federal Reserve.
        - The Federal Reserve typically lowers the federal funds rate by 5% to counter a downturn, however, that rate is currently at an artificially low 2.25%.
        - Like much of the conventional economic wisdom, the idea that recessions are caused by the free market and cured by the Federal Reserve is the exact opposite of the truth.
            - Interest rates are the price of money. Like all prices, they should be set by the market in order to accurately convey information about economic conditions. When the Federal Reserve lowers interest rates, it distorts those signals.
            - This leads investors and businesses to misjudge the true state of the economy, resulting in misallocation of resources. These misallocations can create an economic boom. However, since the boom is rooted in misperceptions of the true state of the economy, it cannot last. Eventually the Federal Reserve created bubble bursts, resulting in a recession.
        - Recessions are not a feature of the free market. They are an inevitable result of Congress granting a secretive central bank power to influence the price of money.
        - The best thing for Congress and the Federal Reserve to do after the bubble bursts is to let the recession run its course instead of starting the boom-and-bust cycle over again by spending billions on "economic stimulus" and printing new money.
    - Donald Trump loses re-election
        - The rules of politics have changed, but they haven't been suspended and the state of the economy is one of, if not the leading factor for the success of an incumbent in an election year.
    - Immigration will slow

        - Many people trying to cross into the US are doing so for an increase in economic opportunity. If there are fewer jobs here, less people will be looking to seek refuge in the US.
    - Domestic social trends might worsen
        - Drug overdoses, suicide rates, middle-aged mortality, and slumping birth rates, which have all seen recent increases (birth rates a decrease) might worsen in a struggling economy.
    - As the NY Times put it, “the venture-capital subsidy to American consumers will dry up.
        - Derek Thompson of The Atlantic tweeted: “If you work at WeWork, drive home with Uber, and then order food by DoorDash, you’re engaging with three companies that are projected to lose about $13 billion this year.”
        - Those losses are supposed to end with an eventual leap into profitability; in a bad economy, they may end a lot more suddenly than that. Many of the money-losing, long-game playing Silicon Valley companies may find it hard to survive in a recession.
- **Recessions in a truly free market economy?**
    - Although the Government policy and the actions of the Federal Reserve create the boom-and-bust cycle, it doesn’t mean there wouldn’t be times of economic difficulties in a free market.
    - As Ron Paul wrote:
        - “Businesses and even whole industries would still close because of changing consumer tastes, new competitors offering superior products, or bad business decisions. There may even be bubbles in a free market as some investors misread fads as permanent changes in consumer preferences. But periods of downturn would be shorter, and most would only affect specific industries rather than the entire economy.”
- **If deficits are this huge now, what happens when the recession hits?** (Mises.org)
    - The Treasury Department recently released new budget deficit numbers and with two months still to go in the fiscal year, 2019’s budget deficit is the highest its been since the US was still being flooded with fiscal stimulus dollars back in 2012.
    - As of July 2019, the year-to-date budget deficit was $866 billion. The last time it was this high was the 2012 fiscal year when the deficit was nearly $1.1 trillion.
    - What is especially notable is that deficits have grown in a time of economic expansion, when they’re usually smaller.
        - After the 1990-91 recession, deficits generally got smaller, until growing again in the wake of the Dot-com bust. Deficits then shrank during the expansion from 2002 to 2007. During the first part of the post Great Recession expansion, deficits shrank but since late 2015, deficits have only gotten larger.
    - The situation is a result of both growing federal spending and falling tax revenues.

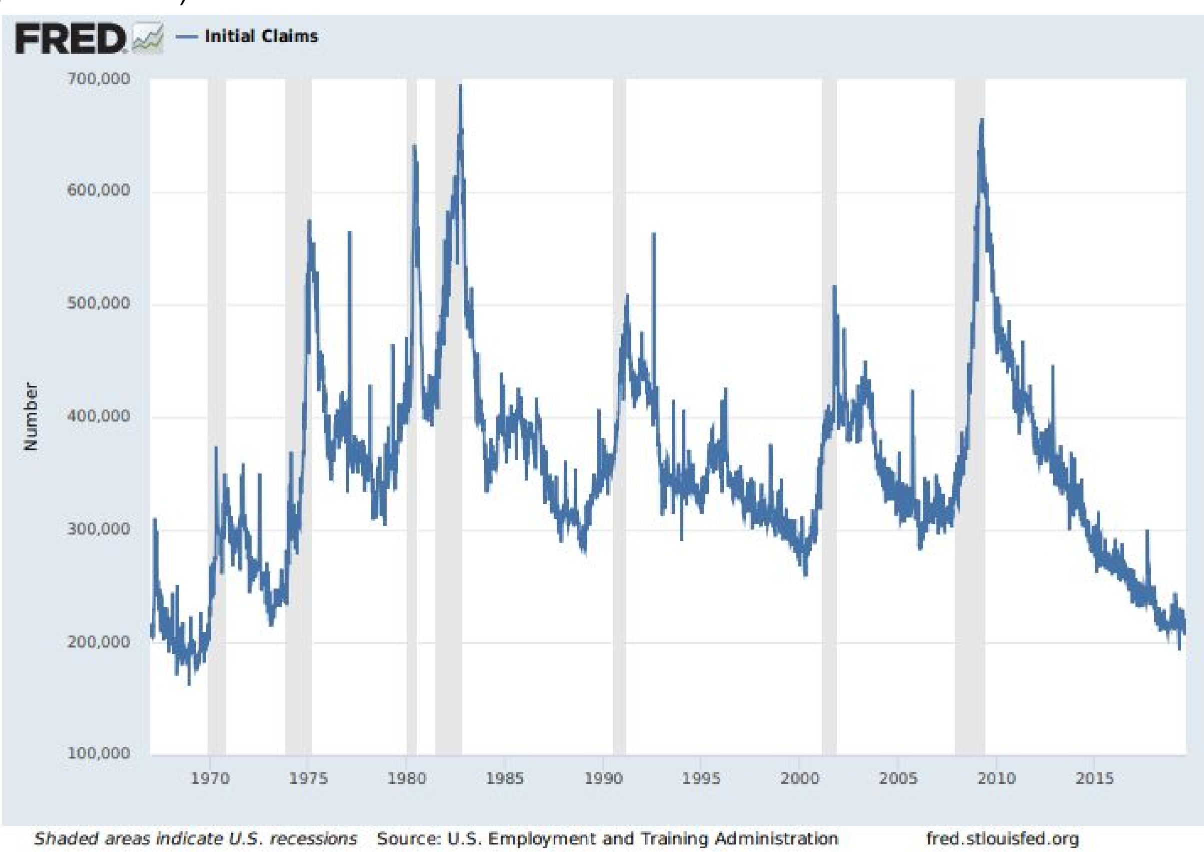
        - As of the second quarter of 2019, year-over-year growth was nearly at a nine-year high. Federal spending rose 7.5%, year-over-year, during the second quarter of this year.
        - Meanwhile, federal revenue growth has fallen, with only one quarter out of the last eight showing year-over-year growth.
        - Historically, a widening gap between tax revenue and government spending tends to indicate a recession or a period immediately following a recession.
    - Back in 2009, the recession and its aftermath (i.e., massive amoounts of stimulus) drove deficits beyond the trillion dollar mark four years in a row. With 2019's deficit total now pushing toward 900 billion, we should perhaps expect deficits to top two trillion when the next recession hits. And probably for several years.
        - This reckoning can be put off, however, so long as the dollar remains the world's reserve currency, and the central bank can continue to monetize the debt. As long as the dollar reigns supreme, the central bank can keep this up without causing high levels of price inflation. But when the day comes that the dollar can no longer count on being stockpiled worldwide, things will look very different.
        - The central bank won't be able to simply buy up debt at will anymore, interest rates will rise, and Congress will have to make choices about how many government amenities will be cut in order to pay the interest bill. Americans who live off federal programs will feel the pinch. State governments will have to scale back as federal grants dry up. The US will have to scale back its overstretched foreign policy. Not all of this is a problem, of course. But lower-income households and the elderly will suffer the most. Everything may seem fine now, but by running headlong into massive deficits even during a boom, the feds are setting up the economy for failure in the future.
- **According to a piece at FiveThirtyEight, “Economists are Bad at Predicting Recessions.”**
    - In a survey released earlier this week by the National Association of Business Economics, 38% of economists predicted that the country will slip into an economic downturn next year, and another recent poll of economists put the chances of a recession in the next 12 months at 1 in 3.
    - However, “Very, very few recessions have been predicted none months or a year in advance,” Prakash Loungani, an economist at the International Monetary Fund said.
        - A 2018 study conducted by Loungani and others looked at 153 recessions in 63 countries between 1992 and 2014 and found that the vast majority were missed by economists in both the public and private sector.

Graphs

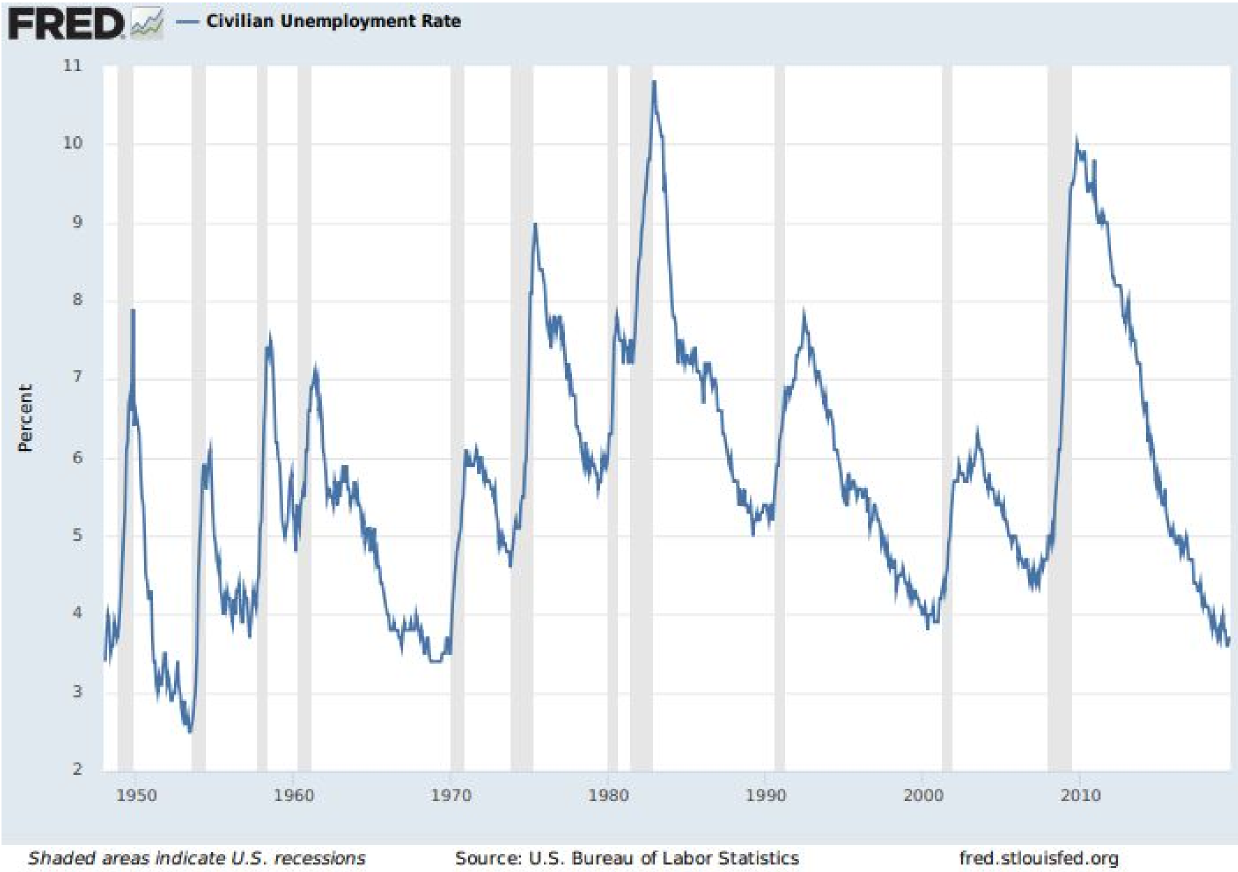
(The Challenger layoff survey)



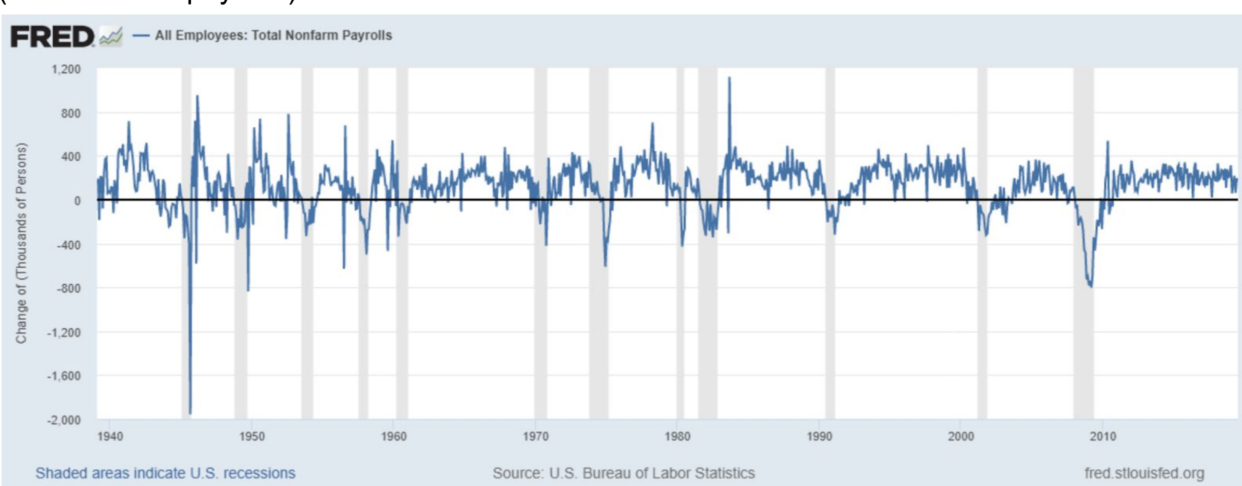
(jobless claims)

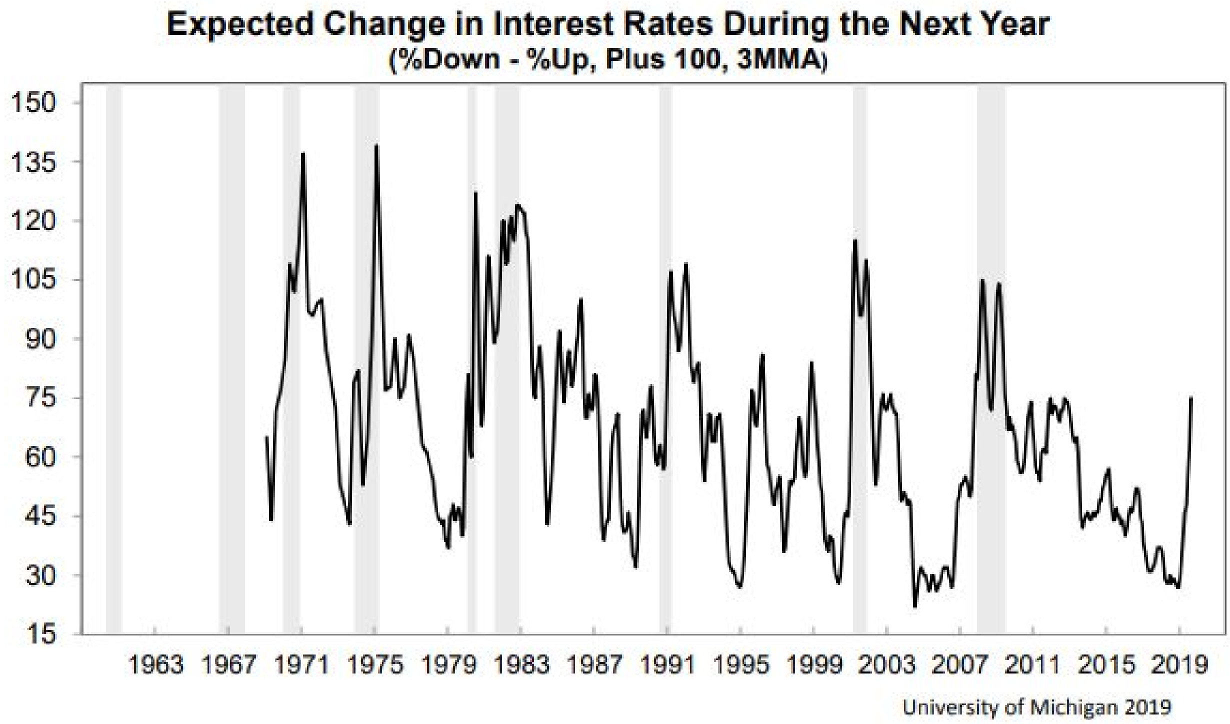


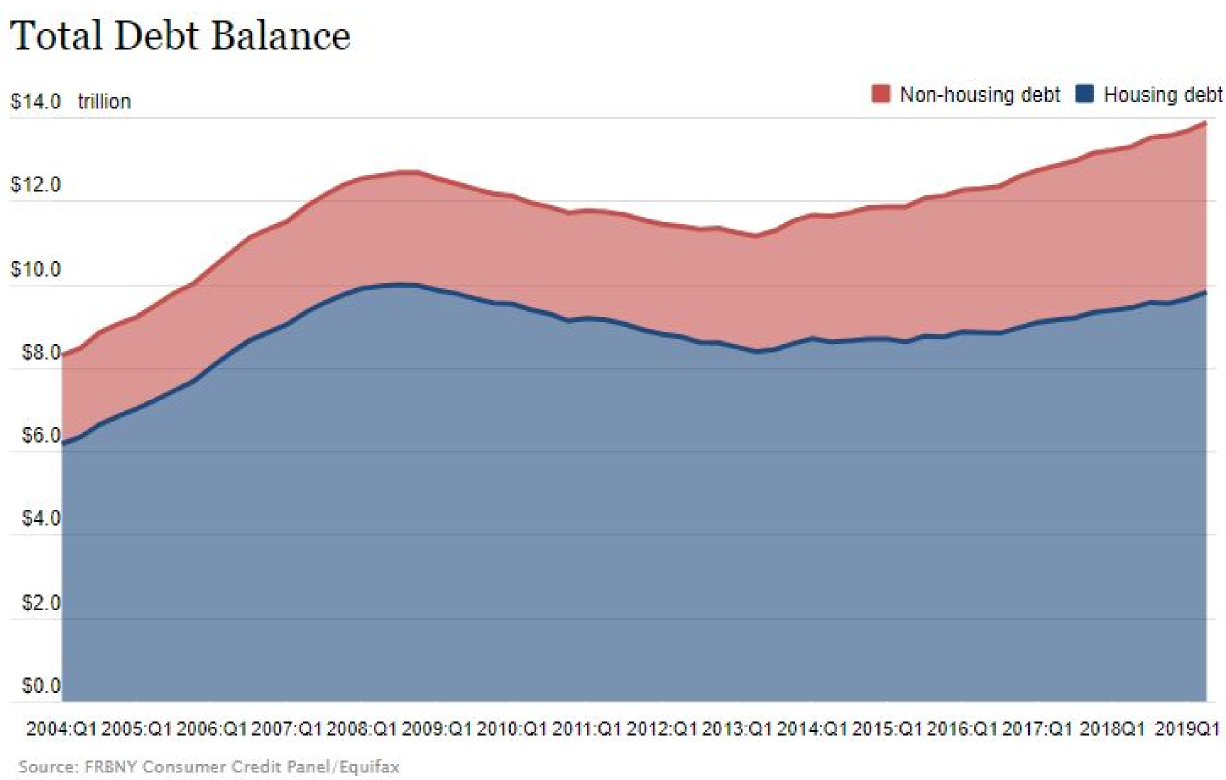
(civilian unemployment rate)



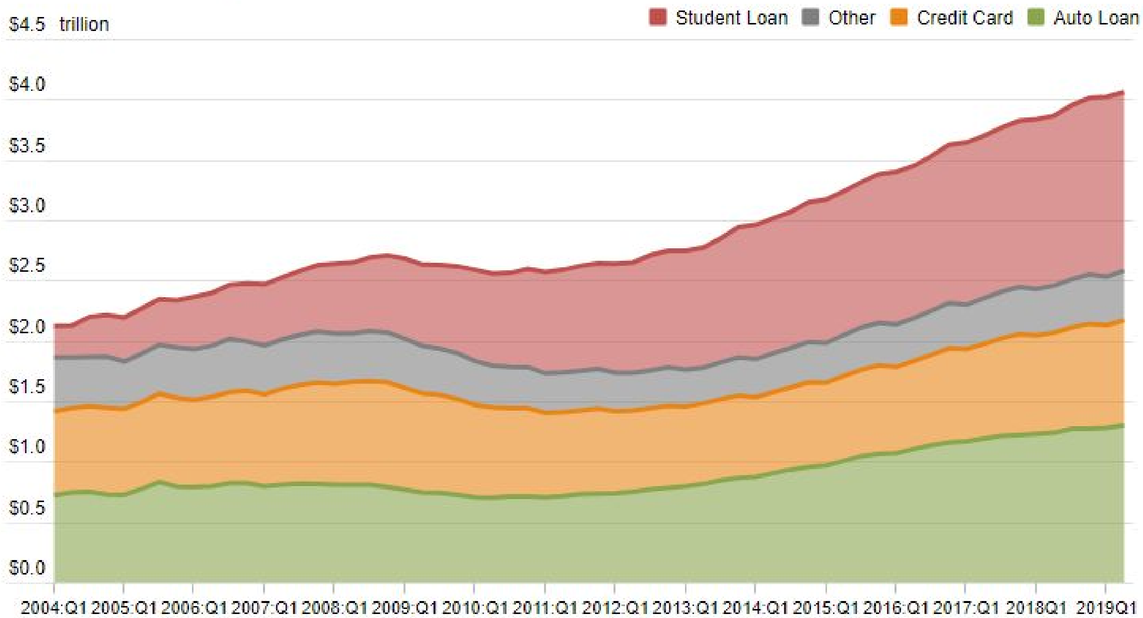
(total nonfarm payrolls)



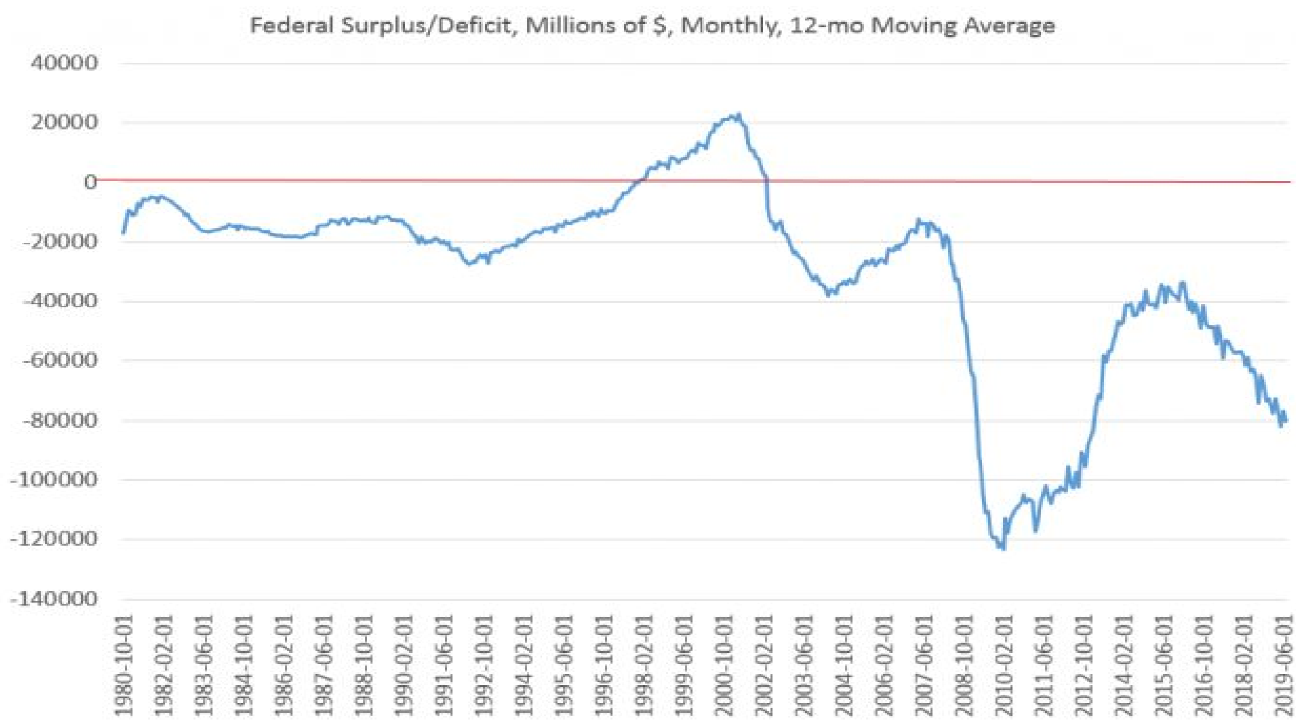

Expected Change in Interest Rates During the Next Year
(%Down - %Up, Plus 100, 3MMA)
150
135
120
105
90
75
60
45
30
15
1963 1967 1971 1975 1979 1983 1987 1991 1995 1999 2003 2007 2011 2015 2019
University of Michigan 2019

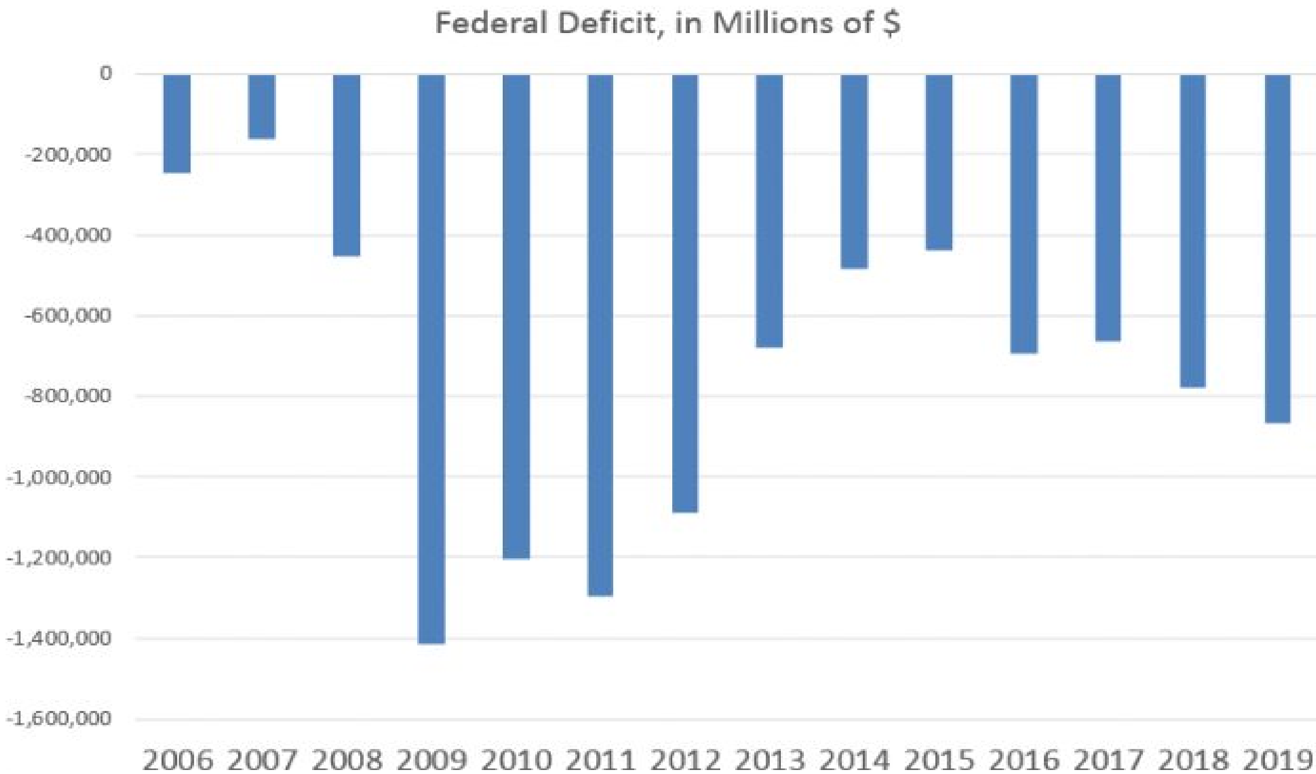

Total Debt Balance
$14.0 trillion
Non-housing debt
Housing debt
$12.0
$10.0
$8.0
$6.0
$4.0
$2.0
$0.0
2004:Q1 2005:Q1 2006:Q1 2007:Q1 2008:Q1 2009:Q1 2010:Q1 2011:Q1 2012:Q1 2013:Q1 2014:Q1 2015:Q1 2016:Q1 2017:Q1 2018Q1 2019Q1
Source: FRBNY Consumer Credit Panel/Equifax

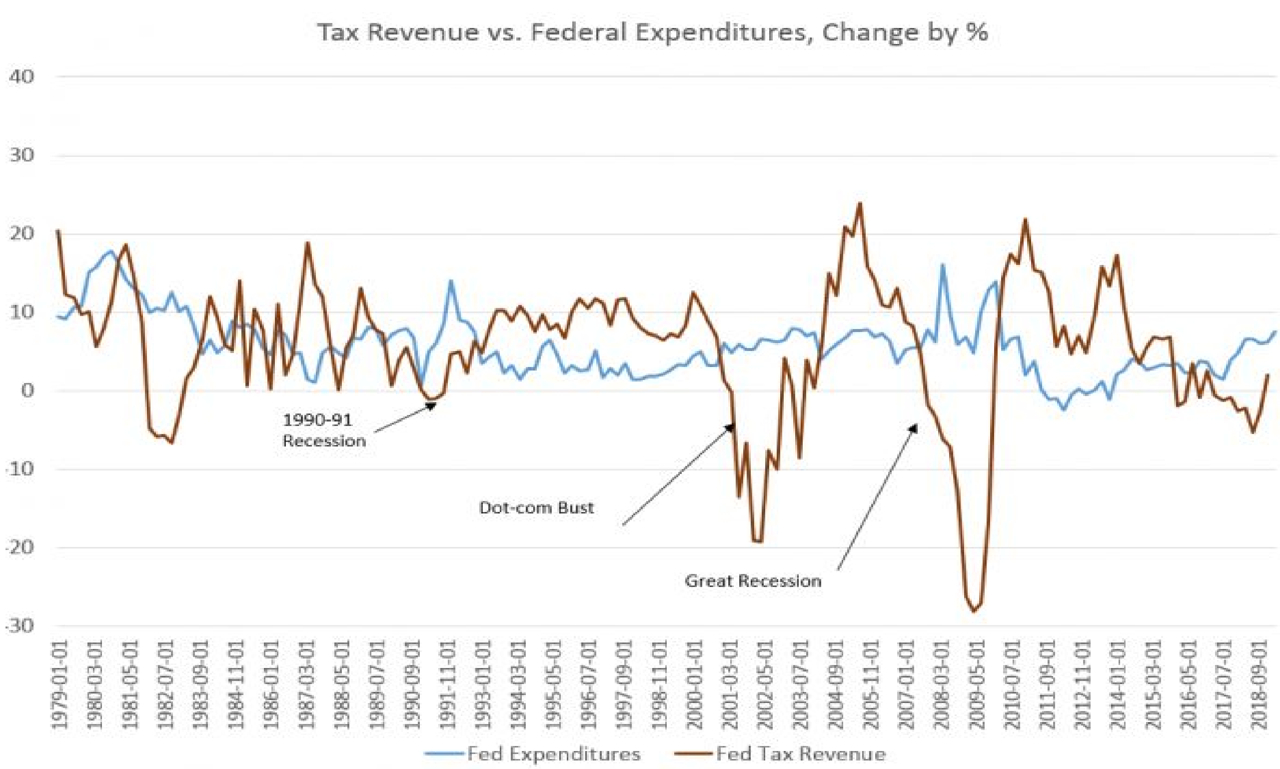
Non-Housing Debt Balance



Source: FRBNY Consumer Credit Panel/Equifax




Federal Deficit, in Millions of $
0
-200,000
-400,000
-600,000
-800,000
-1,000,000
-1,200,000
-1,400,000
-1,600,000
2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019


Tax Revenue vs. Federal Expenditures, Change by %
40
30
20
10
0
-10
-20
-30
1990-91
Recession
Dot-com Bust
Great Recession
1979-01-01
1980-03-01
1981-05-01
1982-07-01
1983-09-01
1984-11-01
1986-01-01
1987-03-01
1988-05-01
1989-07-01
1990-09-01
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2010-07-01
2011-09-01
2012-11-01
2014-01-01
2015-03-01
2016-05-01
2017-07-01
2018-09-01
Fed Expenditures
Fed Tax Revenue

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