The Longbrake Letter*

2019 Outlook – August Assessment

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In recent days, U.S. long-term interest rates have plunged from already historically low levels. The 30-year U.S. government bond yield hit an all-time low in August, briefly falling below 2%. The 10-year yield fell below 1.5% and was only a few basis points away from its all-time lows.

Why is this happening when unemployment in the U.S. is at a 50-year low, the economy is operating somewhat above potential, and inflation is slightly below the Fed’s 2% target, but relatively stable? This has prompted many market observers to opine that the bond market is in a bubble. If that is the case, then at some juncture bond yields should rise substantially. This expectation has persisted for several years, but bond yields, contrary to expectations, continue to move lower.

In this month’s Longbrake Letter, I am adding a section which probes the question of whether U.S. government interest rates could fall to zero or become negative as they have in recent years in Europe and Japan.

This special section is followed by the “August Update of the 2019 Outlook” and commentary and updates about significant risks facing the U.S. and global economies

Could Long-Term Interest Rates in the U.S. Fall to Zero?

Theory and experience indicate that interest rates are determined by three factors: (1) a real rate of return; (2) a premium to compensate for inflation; and (3) a premium to compensate for risk. There are two kinds of risk: default risk and maturity risk. Rates should be higher if the probability of default is higher. Bonds with longer maturities are subject to uncertainties which rise with the length of the time to principal repayment. A term premium compensates for this risk and the term premium rises with the length of the maturity. U.S. government bonds generally are considered not to be subject to default and, thus, yields are composed only of the real rate, an inflation premium, and a term premium.

*The information contained in this newsletter does not constitute legal advice. This newsletter is intended for educational and informational purposes only. Bill Longbrake is an Executive in Residence at the Robert H. Smith School of Business, University of Maryland.
If one knows the values of each of the three components of the nominal yield, the current observed yield can be compared to the long-term theoretical yield and a judgment can be reached about whether the current bond yield is too low or too high. Market participants usually focus on the 10-year yield for two reasons. First, 10-year Treasury securities are abundant and thus highly liquid. This means that prices and yields are not subject to market inefficiencies. Second, ten years is a long enough period to look through short-term oscillations in inflation and economic activity.

So, are today’s bond yields too high or too low? The conclusion that they are too low and thus in a bubble stems from adding the long-term theoretical value of the three components and comparing the sum with the observed current market yield of approximately 1.5%. For starters, the expected CPI inflation rate embedded in Treasury Inflation Protected Securities (TIPS) is currently about 1.75%. Because the CPI historically has averaged 25 to 30 points higher than the alternative CPI measure of inflation, which the FOMC prefers and links its long-term inflation target of 2% to, the long-term inflation premium currently is about 1.5%. Since this is the same level as the currently observed yield, either the two other yield components are zero or bonds are in bubble territory.

The real yield component is not directly observable and thus is subject to some uncertainty about its size. Historically, the real yield was considered to be about 2%. However, in recent years it has been much lower for a variety of reasons, which are not discussed here. There is general agreement that today’s real yield is below 1%, perhaps 50 to 75 basis points. The term premium could be small in a world of low and stable inflation but still should be positive for longer maturity securities.

So, all of this indicates that either today’s government bond yields are too low and bonds really are in a bubble, or something else is at work which justifies not only today’s low yields but could cause interest rates to continue declining and possibly to zero. The persistence of low and negative yields in Europe and Japan suggests that something else is at work and that it could be a global phenomenon.

**My exploration of why long-term interest rates might be headed to zero starts with reviewing the economic theory of saving and investment and examining the evolution of monetary policy.** The commentary that follows has benefited from the work of Charles Gave of GavekalResearch. Gave’s research is proprietary and is not publicly available.
1. Theory of Saving and Investment

Observed saving and investment is always equal. This is an economic tautology. However, saver and investor intentions matter. (Note the term investor does not apply in this discussion to purchasers of existing assets. It applies to allocation of funds to new endeavors, such as plant, equipment, software, and intellectual property as defined in the National Income Accounts. A saver does not consume all of his/her current income; the portion not consumed is saving.) For example, if investors intend to invest more and savers intend to save less, the interest rate must go up to achieve equilibrium between these two sets of intentions.

In real time, there are two interest rates that govern achieving the saving-investment balance: the natural (real) rate of return and the market rate. The natural rate is the rate of return that investors expect to receive on an investment. The market rate is the cost at which investors (businesses and individuals) can borrow.

In equilibrium the two rates should be equivalent. But, the two rates can diverge and policy can cause a persistent divergence. If a divergence exists and persists it will influence investor and saver behaviors.

There are three possible states:

- When the natural rate equals the market rate, an investor will invest in a new capital initiative only if the expected rate of return on investment exceeds the market rate, i.e., cost of borrowing.
- If the natural rate exceeds the market rate, an investor will have incentive to buy existing assets rather than invest in new capital initiatives because a safe arbitrage spread exists and this is preferable to investing in a new initiative with a potentially higher but uncertain expected rate of return. If this state persists, it encourages the use of debt leverage and arbitrage activity in existing assets and pushes up the values of existing assets. This state, if it persists for a long time, leads to speculation and excessive accumulation of debt leverage. It fosters suboptimal investment initiatives and enables inefficient companies to survive through access to cheap debt. In the long run this state leads to lower productivity and lower real economic growth.
- If the natural rate is less than the market rate, an investor has no incentive to initiate new capital initiatives. If this state persists, it leads to recession and economic contraction.

It should be obvious that optimal outcomes depend upon there being little divergence between the natural and market rates. However, saver and investor intentions can cause a divergence in the two rates. Intentions are driven by sentiment/confidence and liquidity preferences. Events in the real world impact
sentiment/confidence and the shifts in sentiment/confidence can be dramatic and have significant impacts and consequences.

This is why there is a role for monetary policy. Ideally, monetary policy should be administered to limit the divergence between the natural and market rates of interest. The monetary authority, the Federal Reserve in the case of the United States, can control the market rate and it can influence saver and investor sentiment/confidence and liquidity preferences through a variety of tools.

If savers are fearful about the economic outlook, they will consume less and save more. When this is a collective phenomenon, the fallacy of saving kicks in and economic activity declines. This depresses the rate of return on capital initiatives and leads to debt servicing problems and debt defaults for businesses. Declining economic activity leads to higher unemployment, lower consumer spending, lower household incomes and defaults on household debts. These consequences can lead to further deterioration in sentiment/confidence, thus creating and feeding a never-ending downward spiral. This is what happened during the Great Depression of the 1930s.

2. **Monetary and Fiscal Policies**

John Maynard Keynes opined that such a downward spiral could and should be stopped by both monetary and fiscal policy. Monetary policy should force the market rate of interest down to reduce or reverse the divergence from the natural rate. This would increase the availability of liquidity, reduce debt servicing costs and help stabilize markets and boost investor confidence. Fiscal policy should replace lost consumer spending power through vehicles such as unemployment insurance and increases in direct government investment spending on public works.

A crucial tenant in Keynes' advocacy of government policy intervention was that it should be deployed to stop the downward spiral and reignite normal saving and investment activity which would lead to economic recovery. In other times when the economy is not in distress, policy should be administered to maintain a tight and ongoing balance between the natural and market rates of interest.

Keynes' advice has not been followed in full. Political pressures are ever present to increase economic activity at all stages of the business cycle. This can be accomplished by keeping the market rate below the natural rate. But, if this divergence persists it leads to speculation, excessive debt leverage, and inefficient investment initiatives. Notwithstanding these consequences, the administration of monetary policy has had a bias to keep the market rate below the natural rate. Unfortunately, this bias stems not just from political pressures but also from the misguided thinking of economists, most of whom believe that active management of
monetary policy can always assure low inflation and high employment. This leads to an over-engineered monetary policy which tends to result in a persistently low market rate relative to the natural rate.

3. The Zero Bound and Quantitative Easing (QE)

Monetary policy aided and abetted the creation of the housing bubble in the early 2000s and fueled speculation and excessive debt leverage. Inevitably the housing bubble burst which led to a cascading liquidation of collateral at fire sale prices. Liquidity evaporated and confidence collapsed. The virulence of the Great Financial Crisis and its potential to morph into a repeat of the 1930s depression prompted policymakers to pull out all the stops. The monetary policy response was aggressive; the fiscal policy response adequate, but arguably could have been more aggressive.

The Fed, however, in administering monetary policy faced a problem. It could only reduce the federal funds rate to zero, but the situation cried out for even greater monetary stimulus. Its solution was to introduce quantitative easing (QE) involving purchase of longer-term Treasury securities and mortgage backed securities issued by Fannie Mae and Freddie Mac which were abundant and highly liquid and also implicitly guaranteed by the federal government.

The intent was to supply liquidity to the markets and force down long-term interest rates with the expectation that this would not only help stabilize financial markets and the housing market but also stimulate investment activity by lowering the long-term cost of borrowing.

An immediate reaction to the inauguration of this policy in 2008 was fear that "printing money" in such quantities would stoke the fires of inflation. Inflation, of course, occurs when the demand for goods and services exceeds the supply. At the time that QE was initiated demand was weak, but the quantity theory of money implied that creating so much new money would inevitably increase demand for goods and services to an excessive degree and that would result in inflation.

But, as time passed, economic activity and demand improved only gradually and inflation did not rise, in fact demand remained at very depressed levels. What was going on? Why weren't the expectations validated? The answer is rather straightforward. Policy depressed the long-term market rate of interest substantially below the natural rate. In an environment with an uncertain outlook and substantial anxiety about prospects for economic recovery, the flood of new liquidity went into existing assets, not into new investment initiatives. There was plenty of money to be made off arbitrage spreads on existing assets. QE liquidity went into existing assets and the depressed market rate resulted in lifting asset values. Thus, asset holders benefited both from appreciation in asset values and the artificially administered high
and persistent interest-rate arbitrage spread. Liquidity provided by QE did not go into new investment initiatives because demand for goods and services remained weak and the return on investment remained depressed and uncertain relative to the safe investment return on appreciating existing assets.

4. Impacts and Consequences of QE

QE monetary policy spawned several consequences, which should have been predictable but were not. One obvious consequence is that it inflated the wealth of asset holders, but had little benefit for the average working person. Wealth inequality has worsened considerably and arguably has contributed to the rise of populism on both the right and the left. Of course, some of the wealth which was created by asset value inflation trickled down into increased consumption, wealthy people have a lower propensity to consume. In other words, wealth creation is a relatively inefficient way to stimulate demand.

Because demand remained weak, much of the liquidity created by QE went into financial engineering of corporate balance sheets, including debt refinancings and share buybacks. In time, low and stable long-term rates encouraged substitution of long-term debt for equity on corporate balance sheets. This has resulted in a considerable increase in corporate debt leverage. Financial engineering created profits that covered up the lack of profit growth from fundamental business activity in inefficient firms. Diversion of funds into financial engineering rather than new investment initiatives and preservation of inefficient firms contribute over time to depressing productivity and real economic growth.

Because demand remained weak for an extended time there was downward pressure on inflation. This downward pressure on inflation was amplified by excess global supply resulting from China’s and many emerging economies’ rapid economic growth.

Bargaining power increasingly shifted from labor to capital owners who had more political clout. As labor’s political influence waned and demand recovered slowly, wage growth stagnated and was slow to increase once unemployment fell significantly. These developments entrenched a low-inflation regime and combined with global excess supply created a ongoing disinflationary pressures.

5. Monetary Policy Becomes Trapped into Responding to Market and Trader Expectations

In summary, QE has resulted in outcomes that tend to be self-reinforcing:
Liquidity provided by QE goes into speculation in existing assets and inflates asset values.

A low and stable market rate encourages financial engineering.

There is limited incentive to invest in new and uncertain business initiatives.

Productivity is depressed by the lack of investment in new initiatives and firms are enabled to continue to use scarce resources inefficiently.

Relative power shifts from labor to capital owners limiting upward pressure on wages.

Weak demand and reduced labor bargaining power reduce inflationary pressures.

Wealth creation results in only a modest boost to consumption and demand remains weak.

Wealth inequality worsens and contributes to social and political reactions.

The upshot is that central banks become trapped. If, as the Federal Reserve tried in the U.S., policymakers attempt to "normalize" monetary policy, markets, which have fed off the fruits of QE in terms of good times and dependable increases in values of existing assets, revolt and create a crisis of confidence which threatens the economic expansion. Policymakers, worried about the possibility of recession, rush to mollify markets with soothing words and overt monetary policy easing actions. Investors breath a sigh of relief and the game continues. But as the game continues, the consequences of the new monetary policy, which ignores the long-term consequences of maintaining a persistently low market rate of interest relative to the natural rate of interest, continue to accumulate. The game can be continued only by steadily feeding the beast by ever lower interest rates and provision of copious amounts of liquidity.

Understood in this way, it should not come as a surprise that the market expects the Federal Reserve to cut interest rates over the next year by 100 to 125 basis points to 1.0% from the current range of 2.0 to 2.25%. Of course, the Federal Reserve's projections for the future federal funds rate don't agree, but as has already happened over the past few months, the market's expectations are likely ultimately to be ratified by the Federal Reserve.

Where does this all end? Probably not with a federal funds rate of 1.0%. It could well end, as it has in Japan and Europe, with a flat yield curve near zero for all maturities. This could occur in fits and starts as it has over the last few months. Or, it could occur very quickly if investor, business and consumer confidence collapses and the U.S. economy goes into recession.

Investors don't think much about the long-term consequences of policy. Their focus is on what asset prices will be tomorrow. In proprietary commentary provided to
subscribing investors on August 19th, Anatole Kaletsky of GavekalResearch, articulated the investor mindset extremely well: in simple language, the combination of LDI [liability driven investment] and QE creates a situation in which bond investors are only concerned about trading ahead of the next monetary policy decision, and neither know nor care what may happen to interest rates, growth and inflation in the next year or decade any more than the proverbial monkey with a dartboard. In other words, what matters for long-term bond yields is not the outlook for the economy, but market expectations for the decisions and statements of central bankers.ø

But central bankers are concerned about growth. And, if the actions of investors threaten that outcome, central bankers will ease monetary policy either by cutting rates in the case of the U.S. or amplifying QE as seems certain to occur in the EU in September. This is the dance between financial markets and central bankers that has taken hold and which seems likely to continue. It implies that interest rates of all maturities will continue to decline, perhaps to zero or even beyond. But, because consequences continue to accumulate steadily, it is not a dance which can continue indefinitely. There will be a day of reckoning. QE has been pursued much more aggressively in Europe by the ECB, yet inflation is declining and the euro area economy probably will be in recession shortly, if it is not already. The yield on the 10-year German bund is currently -0.69%.

In summary, the U.S. bond market is in a bubble if one relies on traditional fundamentals as a guide. It is not in a bubble, however, if the dynamics of the interplay between financial markets and central bankers' monetary policy is understood. Odds are that we have yet to see how low rates could go and zero is a definite possibility. An end to this game is inevitable and it will not be pretty when it eventually occurs. However, remember what Mario Draghi, president of the ECB, promised in 2012 when he said that the ECB would do whatever it takes. Seven years have passed and the day of reckoning has not yet arrived in Europe.

**2019 Outlook - August Update:**

At the beginning of 2019, the fury of the stock market's precipitous decline during 2018 Q4 led many to believe that recession might be imminent. In 1959, before he became Fed chairman, Alan Greenspan opined that stock prices drive economic activity. øLooking back, revised December data appears to bear out the wisdom of that observation. Retail sales in the U.S. fell 2.3% from November to December or about 31% on an annualized basis. It was not a very merry Christmas for retailers.

As 2019 began, the U.S. economy was at an inflection point where the potential for negative feedback from severely damaged investor, consumer and business confidence could have cascaded in an ever-worsening downward spiral.
Sensing the fragility of the situation, Fed officials, communicated that monetary policy would be adjusted to support economic activity. This was ratified by the FOMC’s monetary policy statement issued following its January meeting by not raising the federal funds rate, indicating that balance sheet shrinkage would be ended sooner and introducing the word “patient” to indicate that the federal funds rate would not be raised for a considerable time and leaving the door open, through the language that policy was data dependent, that rates would be cut if the economy faltered.

This reversal in monetary policy was sufficient to restore investor confidence. The U.S. stock market began a vigorous recovery in January and by the end of April reached a new all-time high, totally wiping out the 20% 2018 Q4 decline in stock prices. And, consistent with Alan Greenspan’s 1959 observation, as investor confidence improved, and as stock prices rose, a recovery in business and consumer optimism quickly followed.

Goldman Sachs has quantified the relationship between what is happening in financial markets and real economic activity by constructing a financial conditions index (FCI) and demonstrating that changes in this index unambiguously lead changes in economic activity. The linkage between the two is changes in investor, consumer and business sentiment which lead to spending and capital expenditures decisions.

However, in May growing evidence of slowing global growth, particularly in China, which has been a driver of global growth over the past couple of decades, and the escalation in the U.S. trade war with China accompanied by a breakdown in negotiations between the two countries, fostered another swoon in investor confidence, albeit not nearly as violent as what occurred in 2018 Q4. This time the Fed responded quickly with soothing words and again ratified its probable intent to ease monetary policy at the June FOMC meeting by extracting the word “patient” from its monetary policy statement and indicating that it was not concerned about inflationary pressures.

Once again investor sentiment was buoyed up and stock prices again rose to new highs.

The FOMC then ratified market expectations by cutting the federal funds rate by 25 basis points on July 31st and simultaneously ended shrinkage of its balance sheet. However, the market was disappointed that the FOMC’s policy statement was ambiguous about the possibility of further rate cuts, which the market had already priced in.
The market’s disappointment was followed within days by President Trump’s announcement that 10% tariffs would be imposed on September 1st on all Chinese imports not already subject to tariffs. This decision followed the failure a second attempt to negotiate a trade deal with China.

And, if these developments were not bad enough, Germany and China released disappointing reports on economic activity and demonstrators shut down the Hong Kong airport. Hardly noticed because of everything else that was going on, Argentina’s financial markets crashed when the presidential primary election did not turn out as expected. All of this led to a global market panic on August 14th. U.S. stock prices fell nearly 3%. Bond yields plunged and the price of gold surged.

Investor sentiment darkened. Talk of the possibility of recession mushroomed once again and the media was filled with stories.

At this writing, it appears that the panic may have subsided for the moment. Policymakers in the U.S. and Germany have openly talked about fiscal stimulus. China indicated it was considering allowing provincial governments to issue more bonds for infrastructure spending. Hong Kong protests moderated and the airport was open again.

These episodes demonstrate the importance of monetary and fiscal policy in supporting favorable market confidence. Abrupt and negative changes in market confidence, if not reversed quickly, can trigger a collapse in business and consumer confidence that adversely impacts real economic activity. Once confidence frays across the board, it sets into motion a series of developments that can lead to recession.

Monetary policy alone cannot cure underlying and fundamental imbalances in the U.S. and global economies. I described these imbalances at the beginning of the year and they are articulated in the paragraphs which follow with updated commentary about developments.

Accommodative monetary policy can delay the day of reckoning, but once imbalances become too great, monetary policy cannot by itself prevent recession. This lesson is clear from the experience of the Great Financial Crisis and Great Recession of 2007-09.

Moreover, accommodative monetary policy can have perverse effects, as discussed in the opening section of this month’s letter, if it prevents correction of imbalances and, worse, if it fosters an escalation in imbalances. That would appear to be the case today. One needs to look no further than Japan and Europe, both of which have had super-aggressive accommodative monetary policies for several years.
Both are on the cusp of recession. And, there is doubt that monetary policy can continue to come to the rescue, as embodied in the quip that monetary policy may be out of ammunition or bullets.

Given all of this, it is natural to raise the question of when recession will occur and cleanse the economy of the imbalances that have been building. What we know is that accommodative monetary policy, through its favorable impacts on investor, consumer and business confidence, can support economic activity and extend an expansion for a very long time. The FOMC has been very clear that it sees its mission to support the economy in the short run and this view appears to be supported by beliefs of policymakers that the potential longer run consequences of this approach to policy are not significant. This, of course, is debatable, but I am skeptical of this sanguine view.

What I can say, I believe with confidence, is that recession is not yet imminent. What I can also opine is that the day of reckoning is inevitable but the timing could be a long time in coming.

2019 Outlook – Beginning of the Year: (The paragraphs that follow were drafted at the beginning of 2019 and have not been edited for subsequent developments. Updates are shown in bold italicized print.)

As 2019 commenced, what economists refer to as “tail risk,” which is large deviations from generally anticipated outcomes, was unusually high. While the consensus does not expect recession to occur during 2019, tail risk is significant and the possibility of recession occurring in the U.S., and some other countries, has risen.

Specific outcome projections in this “Outlook” were set at the beginning of 2019 and were tied to an overall assumption that growth would slow gradually from 2018’s significantly above potential pace but that no recession would occur. However, if recession does begin before the end of 2019, actual outcomes by the end of 2019 will differ considerably, and negatively, from the projections.

At the beginning of 2019, in the case of the U.S., unemployment was significantly below the natural rate and this gap is expected to widen during the course of 2019 and will add to wage and inflation pressures. However, increasing labor scarcity will result in slower employment growth and that will have knock on impacts resulting in slower spending, investment and GDP growth. In addition, the benefits of fiscal stimulus will wane during 2019 and turn negative by the end of the year.

We are in the mature phase of the business cycle. Best to enjoy the good times now because we know from history that strong economic momentum, when the economy
is operating above full capacity, usually eventually leads to recession and correction of the imbalances that built up during the euphoric period of strong growth.

Recession risks are rising but the timing of onset of recession is uncertain. In the best case, growth will slow to a sustainable level and economic imbalances will moderate without recession. Such a benign \textit{soft landing}, based on history, is not a high probability outcome.

Views about timing of a recession and its severity differ. A recession could commence as soon as sometime during 2019, although most view this as a low probability. As time passes it is likely, although not assured, that the probability of recession will increase. Political developments, policy errors, or sharp declines in consumer, business, and investor sentiment could accelerate the timing of recession and its severity.

At the beginning of 2019, several significant risks faced the U.S. and global economies: (Updates to discussion of significant risks articulated at the beginning of the year covering Q1 are in blue bold italicized print; updates covering Q2 are in blue bold italicized underlined print; updates covering July and August are in red bold italicized print.)

- **The U.S. economy is operating above full capacity.** Based upon Congressional Budget Office (CBO) analysis, the U.S. economy entered 2019 operating about 0.30% (subsequently revised to 0.68%) above capacity on a four-quarter moving average basis. This is expected to grow to approximately 0.8% to 1.0% by the end of the year. In the past the economy has rarely operated at full capacity for very long before recession occurred. Soft landings don’t usually occur. \textit{Economic expansions don’t die of old age, they die when the economy operates above capacity and overheats.}

\textit{In early 2019, most forecasters lowered their expectations for U.S. real GDP growth in 2019, but all forecasts remained well above estimates of long-term potential growth. Q1 real GDP growth of 3.1% was stronger than expected, but fundamental growth was actually quite weak (1.1%) when the effects of inventory building, net exports and government spending are purged. Reflecting accommodative U.S. monetary policy and a reacceleration in China’s growth following its recent slowdown, prior to the escalation in the U.S.-China trade war, U.S. economic growth had been expected to strengthen during the remainder of 2019. During April, Goldman Sachs and other forecasters upgraded the outlook for U.S. GDP growth. The collapse of U.S.-Chinese trade negotiations and the implementation of new and higher tariffs by both}
countries is expected to slow GDP growth in both countries in coming quarters.

This risk remains but may have moderated somewhat because Presidents Trump and Xi agreed in late June to resume negotiations and delay implementation of additional tariffs. Monetary policy actions, Chinese stimulus, strong business and consumer confidence in the U.S. lessen this risk in the near term, but over the longer term the U.S.-China trade war seems likely to reverse springtime’s more favorable developments. Although the labor market remains robust and consumer confidence is trending at cyclical high levels, other indicators, particularly in the manufacturing sector, continued to weaken progressively during Q2.

The optimism of Q2 gave way to investor pessimism in Q3. The trade détente between the U.S. and China had a very short life and President Trump imposed 10% tariffs on Chinese imports to be effective September 1st, although the effective date for some of these tariffs was deferred until the end of 2019. While most economic reports reflect solid economic activity and a high level of business and consumer confidence, growth momentum is ebbing gradually. This is particularly apparent in the manufacturing sector but is also showing up in the growth slowdown in total hours worked. Also, although not much talked about, business investment has weakened, a likely casualty of slowing global growth and increased policy uncertainty.

- **Excessive corporate debt.** GS published an analysis of corporate debt on May 4, 2019, in which it concluded that even though corporate debt as a share of GDP is at an all-time high, it is below previous peaks as a share of corporate cash flows and corporate assets, which are more salient measures of risk. Other developments also lessen the risk posed by the high level of corporate debt. These include lower interest rates, more stable cash flows, a shift toward longer maturities, and reduced dependence of capital expenditures on external financing. GS concluded that if the economy enters recession, “…defaults would rise, spreads would widen, and capital spending would decline substantially.” But, risks posed by corporate debt are no greater than those which preceded previous recessions.
This is a longer-term risk, which is escalating gradually. Low interest rates and easy access to credit are encouraging leverage and enabling weak competitors to remain in business.

While high corporate debt leverage may appear to be manageable as long as the economy is expanding, this could change quickly if recession occurs. The risk is that revenue shortfalls in a recession could force overleveraged companies into bankruptcy. Uber, for example, could be quite vulnerable. Once a prominent bankruptcy occurs, it is usually followed by others because credit dries up. This is one of the ways in which a recession, like a virulent cancer, can develop and deepen.

- Leveraged loans and collateralized debt obligations (CLOs). This is a longer-term risk, which is worsening gradually, powered by investor appetite for yield and belief that risks are limited.

  During the first half of 2019 CLOs performed extremely well as financial conditions eased and market volatility declined. But, new issuance declined as investors increasingly shied away from this asset class. This is a favorable development as it lessens the potential for speculative over extension in this asset class. Not surprisingly, as demand has fallen, yields have risen, reflecting sanity on the part of many investors – one should get paid for the risk inherent in these instruments.

- Deteriorating residential loan credit standards. Over the past two years the GSEs have liberalized residential loan credit standards for debt service coverage and loan-to-value ratios, which elevate the potential for significant losses should recession occur and be accompanied by home price depreciation.

  There is emerging data that indicates that the GSEs are tightening credit standards since the new director of the Federal Housing Finance Agency was confirmed by the Senate. This risk remains, but it is limited in scope.

- Trade war: this risk will depend upon the outcome of U.S.-China negotiations and whether the U.S. decides to impose tariffs on automobiles and auto parts.
This risk escalated sharply in early May with the failure of U.S.-Chinese trade negotiations and the implementation of higher and additional tariffs on imports of goods by both countries. In addition, the Trump Administration has been noticeably silent about the possibility of implementing auto tariffs and has not released the Commerce Department’s report. If new tariffs are imposed on imported European goods, the European Union is expected to retaliate in kind.

This risk has increased and is contributing to slowing global economic growth. Uncertainty has led to slower growth in business capital expenditures.

The second attempt at trade negotiations in late July went nowhere and President Trump, contrary to the advice of many of his advisors, announced that 10% tariffs would be imposed on September 1st on all remaining Chinese imports not already subject to tariffs. China immediately retaliated by prohibiting import of American agricultural products and let the Chinese currency depreciate. This escalation in the trade war came at a time when growth was already slowing in many countries, including China. Even though tariffs have been directed primarily at China, it is becoming evident that significant spill over effects have affected other countries. Germany, whose economy relies heavily on exports, has been particularly hard hit. Germany’s manufacturing sector has contracted in every month in 2019 so far. Also, while the direct effects of tariffs on growth are limited, the indirect effects increasingly appear to be substantial. GS estimates that U.S. real GDP will decrease over the next year by 0.6% because of tightening financial conditions, increased policy uncertainty depressing business investment and supply chain disruptions. GS’s view may turn out to be optimistic if negative feedbacks kick in.

- **Tight monetary policy** – the FOMC’s change to a neutral monetary policy in January lessened this risk.

FOMC monetary policy review could result in a revised inflation target in an attempt to assure that inflation averages 2% over the entire cycle – this would result in keeping rates low until inflation rises well above 2%. In addition, FOMC policy will end quantitative tightening in September, which will reduce the risk of tighter market liquidity. Financial markets expect the Fed will need to reduce the federal funds rate by 75 basis
points by the end of 2019 and another 25 basis points in early 2020. The slightly inverted yield curve suggests that monetary policy may be too tight.

Financial conditions in the U.S. eased considerably during the first half of 2019 which diminished this risk. However, as Q2 drew to a close, financial markets became concerned increasingly by slowing global growth and escalating trade tension and expectations for decreases in short-term interest rates rose. At its July 31st meeting, the FOMC responded to market pressure by cutting the federal funds rate by 25 basis points. In addition, the FOMC eased liquidity by ending QT.

Market relief in response to the federal funds rate cut was very short-lived and negative economic data from Germany and China, along with escalation of the U.S. – China trade conflict led to volatility in global stock markets and a plunge in long-term government bond yields. Pressure is building on global central banks to ease monetary policy, perhaps aggressively. It is unclear, however, whether monetary policy has much fire power left. Bond yields are deeply negative in Europe. Quantitative easing has had little lasting impact on improving economic activity and raising inflation in both Europe and Japan. The same lack of monetary policy effectiveness may be ahead for the U.S.

- **Tightening financial conditions** since the beginning of the year this risk has lessened, but greater than expected deceleration in global growth could easily reignite tightening.

Financial conditions in the U.S. eased considerably in the first quarter but tightened somewhat in May in response to the failed U.S.-Chinese trade negotiations, but eased again as it became apparent that the FOMC would probably cut interest rates. By early July financial conditions in the U.S. had returned to the level that existed during much of 2018 prior to Q4’s financial markets tempest.

This risk diminished in the first half of 2019, but could quickly return if U.S. and global economic activity weakens more than expected.

Indeed, right on cue after the failure of trade negotiations, financial conditions tightened considerably in late July and August as angst about slowing global growth, including in the U.S., and other risks
spooked market participants. Whether easier monetary policy can restore calm, as it has in similar past episodes, remains to be seen.

- Declining consumer, business, and investor sentiment. Consumer and investor sentiment have improved since the beginning of the year; some measures of business confidence have softened.

  This risk diminished in the first half of 2019, but could worsen quickly, if financial market volatility returns. Accommodative monetary policy will be important in maintaining positive investor sentiment.

So far during Q3, business and consumer confidence has remained at cyclically high levels. This could change quickly with the recent volatility in the U.S. and global stock markets and the plunge in long-term government bond yields. Consumer confidence dropped sharply in the University of Michigan survey released on August 16th. If stock market turmoil continues, other consumer confidence surveys are likely to weaken. If that occurs, retail sales and consumer spending would weaken.

- Escalating political uncertainty. Sparring between President Trump and Congress has not had any apparent impact on economic activity. However, the next bout of political uncertainty that is certain to occur involves the need for Congress to raise the federal debt ceiling and pass a budget resolution for fiscal 2020 not later than September 30, 2019. Failure to pass a budget resolution would result in the implementation of sequestration, a legacy of the Budget Control Act, which would result in substantial spending cuts.

  The risk of political uncertainty in the U.S. has diminished in the short run, but could escalate at any time and probably will in September. Political uncertainty is rising in the U.K. and Europe and could be amplified by the recent EU parliamentary elections, although there is no evidence of this occurring. These risks are slow moving and the extent of the risks won’t be visible for several months.

Somewhat unexpectedly Republicans and Democrats agreed to a budget compromise in late July and passed legislation which lifted spending caps and suspended the debt ceiling until July 31, 2021, thus eliminating the potential for a government shutdown at the end of
September. Some momentum appears to building among Democrats to initiate presidential impeachment proceedings. Democratic leadership is not anxious to proceed, however, and developments in financial markets may direct attention away from impeachment. In any event, at this juncture there has been no apparent adverse effect of political uncertainty on economic activity.

- **Rise of populism and nationalism.** This is a long-term risk, which is evolving slowly. The recent parliamentary election in Greece in which a centrist party ousted the incumbent populist party is a hopeful sign that populism may be receding as a political force.

  President Trump’s version of populism continues to resonate with a large segment of the American population. Populism on the left has also gained some traction. If recession occurs, and if it is severe, this risk would probably increase substantially.

- **Brexit and the European Union** the risk of “no deal” is rising and if realized would have negative consequences for economic activity in the U.K., but also in Europe.

  The U.K. and the EU kicked the can down the road by extending the deadline for a deal from March 29th to October 31st; this risk remains; uncertainty is depressing U.K. economic activity. U.K. political uncertainty has escalated with the decision of Prime Minister Theresa May to resign. It is likely that Boris Johnson, a Brexit hardliner, will succeed her. However, this will not necessarily lead to a “no deal” Brexit but alternatively to Parliament’s acceptance of a slightly altered “May Plan” with an extended implementation time frame.

  Boris Johnson became the British Prime Minister in July and appears to be pushing ahead with a “No Deal” Brexit. It is unlikely that Parliament would approve this outcome, but Johnson might simply let the October 31st deadline pass without taking any action, which, in effect, would achieve a “No Deal” outcome. There is talk that members of Parliament might try to pass a “No Confidence” motion and force a new election. However, the unwritten British constitution is unclear whether, if a “No Confidence” motion passed, Boris Johnson would be forced to resign. The outcome is up in the air, but none of the possibilities bode well for the U.K. economy. Whatever happens in the U.K. will not be positive for the EU economy, which is already struggling.
• **Slowing growth – Italy, France and Germany**

Italy is in recession and if it deepens this could strengthen populist and nationalist political movements, which could threaten the euro and trigger an existential crisis for the EU.

*This risk is escalating – Italy is in recession; growth has slowed in Germany and it may soon join Italy in recession; ECB’s monetary policy has been ineffective in preventing substantial deceleration in EU economic growth. Italy and the EU averted a budgetary crisis a few months ago, but once post-EU-election politics are resolved, this crisis could erupt anew since Italy’s economic malaise remains and probably is worsening. Another risk that could be triggered by slowing growth is a European banking crisis, and if it occurs, German banks could be the focal point; in this regard, the weakness of Deutsche Bank is especially worrisome.*

Germany’s manufacturing sector is already in deep recession and the rest of the economy may shortly join it. Germany could counter recession by aggressive fiscal policy. Unlike many other countries, Germany’s public debt to GDP ratio is relatively low, so there is plenty of room for deficit spending. A concern, however, is that German banks are weakly capitalized and stuffed with loans that could quickly sour if recession grips the EU. This vulnerability is a consequence of Germany’s policy of depending on exports for growth which has involved running an enormous trade surplus for several years. German banks have financed the purchase of German exports by other countries. Recession could impair the ability of borrowers to service those loans.

Italy appears to be heading toward crisis. Its economy has been in recession and its banks are loaded with nonperforming credits. A budgetary dispute with the EC several months ago was papered over, but not resolved. Italy must present its budget plan to the EC by October 15th. Because of the recession, it is likely to include a substantial deficit which would exceed EU policy guidelines. This sets up a political confrontation between Italy and the EC. On top of this Italy’s governing coalition has parted company which could lead to new elections unless a new governing coalition can be stitched together. The right-wing League headed by Mateo Salvini has been climbing in the polls and wants a new election which it expects would increase its
number of seats in parliament. The situation is fluid, but given economic malaise and political turmoil, risks of an EU existential event are rising.

- Slowing growth – China, emerging markets. Economic conditions are expected to improve in China during the second half of 2019; if this does not occur as expected, global growth will decelerate more than expected.

  China’s stock markets were up 31% through mid-April, reflecting investor optimism that policy would end the growth slowdown and that U.S.-Chinese trade negotiations would conclude amicably. Much of the growth optimism about a better 2019 second half in the U.S. and many global economies hinges on growth reacceleration in China. Current Chinese policies support, but do not guarantee, such an outcome. With the failure of U.S.-Chinese trade negotiations in early May, Chinese stock markets sold off sharply, but did not give all of their 2019 gains. Even though Presidents Trump and Xi agreed to recommence trade negotiations, the Shanghai stock market has trended sideways since early May, perhaps because expectations for a favorable outcome to the renewed talks are low. Japan and many emerging markets economies have slowed, reflecting weaker Chinese growth.

  This is a significant risk. It is too soon to determine whether Chinese policy actions will be effective in boosting global growth and, unfortunately, the trade war with the U.S. adds to downside risks. Data reported in the last month are not encouraging.

  China’s July economic activity reports were weak and amplified fears that the trade war with the U.S. and slowing global growth is taking a significant toll on the Chinese economy. Previously, when slowing global growth threatened Chinese growth, policymakers deployed massive fiscal stimulus which not only spurred the Chinese economy but also helped reverse the global economic slowdown. However, fiscal stimulus came at a cost of increasing debt substantially. Chinese policymakers are well aware of the hazards of excessive debt leverage and have chosen to allow growth to slow to a more sustainable level rather than risk another round of debt fueled growth that would increase financial fragility. This policy is also consistent with the transition of the Chinese economy from an infrastructure/export focus to a consumer focus. Thus, it seems increasingly likely that China will not rescue the global economy from slowing growth this time around.
- **Turmoil in U.S. financial markets** (this risk was not included in the original list, but it is significant enough to add to the list) - trading in financial instruments has increasingly migrated to indexed products otherwise referred to as ETFs (exchange traded funds). The market share of ETFs continues to increase. The risk posed by ETFs could be severe if a substantial decline in stock markets leads to substantial selling of ETFs and a flight to cash. The underlying liquidity of many ETFs has not been tested under extremely adverse market conditions. If it turns out that many of these products lack liquidity, attempts to liquidate them could have adverse contagion effects on other segments of financial markets and deepen the severity of a market downturn. And, because the Dodd-Frank Act limited the Fed’s ability to act as lender of last resort by providing liquidity to specific market segments, the Fed’s ability to derail a financial panic limits or precludes some of the actions it took to arrest the downward spiral unleashed by the Great Financial Crisis.

*Prices in U.S. stock markets continue to climb ever higher, spurred by low interest rates and the expectation that the FOMC will ease monetary policy.*

*Whether ETFs turn out to be a significant problem will not be known until a full-scale crisis erupts in financial markets. Whether lower interest rates can sustain high stock prices also remains to be seen. The risk is that recession decimates earnings and this more than offsets the benefits of more abundant liquidity and easier monetary policy. Charles Gave, who is highly respected in financial markets, believes that weakening corporate profits, as reported in recent revisions to the National Income Accounts, indicate that U.S. stock prices are overvalued in the aggregate by 55%. My sense is that Gave’s overvaluation estimate depends not just on the level of profits but also on a higher discount rate (higher long-term interest rates). If long-term interest rates follow the European precedent of collapsing to zero or even going negative, such an outcome should provide support for higher stock prices. Given these various possibilities, it is little wonder that investors are increasingly nervous.*

Recession risks were very much on the minds of many as the stock market plunged in December 2018. *Concern dissipated as stock markets recovered in Q1 2019 and went on to new highs in April and again in July. However, stock market volatility and the plunge in bond yields in late July and August have renewed anxieties about imminent recession. Unlike the recession scare at the end of*
2018, global and U.S. hard economic data are weakening, which suggests that the possibility of recession, even though most models indicate a probability substantially below 50%, should be taken more seriously now.

- Almost half of CEO’s attending a Yale C.E.O. summit in December expected the U.S. economy to be in recession by the end of 2018 (that is not a missprint), which obviously did not happen.
- Corporate CFO’s were also gloomy in December according to the Duke University/CFO Global Business Outlook survey, 48.6% expect the U.S. economy to be in recession by the end of 2019.
- Each month the Conference Board asks CEOs to rank their concerns. In January 2018, recession risk ranked 19th out of 19 choices. In January 2019, recession risk ranked first. This ranking, however, has probably declined since January.
- Over half of the economists polled by the Wall Street Journal expect recession to begin in 2020; 10% expect recession to begin in 2019.
- In December, Goldman Sachs pegged recession odds at 15% in 2019, but noted that the market’s probability was 50%. In January, GS calculated the odds of a recession beginning in the next 12 months as 14%, but that probability would rise to 20% if the global growth rate declines by 1%.

**GS reduced recession odds in the next 12 months to 10% in early April and boosted its outlook for growth in the U.S. over the next two years. Although growth in economic activity in the U.S. is clearly slowing, the slowdown is from above potential to potential. The labor market is strong, consumer sentiment is near cyclical highs. As long as financial conditions do not tighten, and they are not likely to do so as long as the FOMC eases monetary policy, recession is not likely to occur.**

**Like most other forecasters, GS reduced its 2019 real GDP growth forecast in July, but GS remains among a shrinking group of optimists. GS believes easier monetary policy to do its job of extending the economic expansion and expects that interest rate cuts this year will need to be reversed following the 2020 presidential election.**

- Bank of America/Merrill Lynch recession model indicated a 21% chance of recession (updated Feb. 12th), but an alternative recession model, based upon financial markets measures, placed the odds of recession in 2019 at approximately 40% (this probability has probably declined with the market’s improvement in January and February).
Notwithstanding the turbulence in financial markets during July and August, ML’s model pegs recession probability over the next 12 months at 20%, about the same odds which prevailed during last December’s market storm. However, based upon the slope of the yield curve alone, ML’s analysis indicates a 51% probability of recession within 12 months.

- The New York Federal Reserve’s recession model indicated a 31% probability of occurrence within the next 12 months in late July.

- Michael Harnett’s fund manager survey, conducted between August 2nd and 8th, indicated that 34% of investors expect a recession to begin within 12 months.

However, economic activity data in the first quarter, while weak, did not validate December’s extreme pessimism. In addition, the FOMC’s moderation of monetary policy in late January from a tightening bias to neutral contributed to a lessening of fear that recession might be imminent. Optimism re-emerged. Neither the extreme pessimism in December nor the renewed optimism in the first quarter appear to be consistent with evolving trends in global economic activity. Data clearly indicate that global growth is slowing gradually and the preponderance of risks to the outlook continue to be negative, although short-term risks have diminished somewhat.

What we know from past experience is that forecasting a recession’s onset is notoriously difficult. The fact is that we are usually well into recession before the consensus acknowledges it. What we do know from history is that when risks are unusually high, as they are at the beginning of 2019, the economy is especially vulnerable to unexpected shocks. Consumer, business and investor sentiment can plunge quickly and propel the economy into a downward spiral. Trying to forecast the pivotal shock and perhaps more importantly, its timing, is a crap shoot. The best policy is to be prepared for disaster while hoping for benign outcomes.

As the dog days of August slowly pass, economic activity in the U.S. remains quite solid, with the exception of the manufacturing sector which has been weakening for several months in response to slower global growth and trade policy. While the labor market remains strong, growth in total hours worked peaked at 2.26% in August 2018 and has trended down steadily to 1.28% in July 2019. Growth in payroll employment peaked at 1.83% in January and had eased slightly to 1.53% by July. Changes in the rate of growth in hours worked leads changes in payroll employment because employers cut (increase) hours before they cut (increase) bodies.
Turmoil in financial markets leads to tighter financial conditions and can adversely impact economic activity with a lag. Gyrations in stock prices have a significant impact on business and consumer confidence. This was evident in December and January data releases. However, if the stock market recovers quickly, as it did at the beginning of the year, the damage to confidence and real economic activity is short lived as was the case during the first half of 2019. Markets are betting now that easier monetary policy will again do the job of restoring fraying confidence and the economic expansion will roll on, albeit with easy monetary policy and lower interest rates. And, this may come to pass. However, real economic activity is weakening currently in a way that was not the case in December. So, keep an eye on the stock market and confidence surveys for clues as to whether the recent volatility in financial markets morphs into a full-blown crisis in confidence that precipitates recession.
2019 and Beyond – Forecast Summary for the U.S. and the Rest of the World, Highlights of Key Issues, and Identification of Risks

Observations about the 2019 U.S. and global economic outlook and risks to the outlook are listed below. As events unfold during 2019, this will enable the reader to track my analytical prowess. Observations which are on track are denoted by “+”; observations not on track are denoted by “-“; indeterminate observations are denoted by “?” and general observations are denoted by “√”.

Forecasting accuracy, which is always difficult, becomes much more so when the economy is strong and above the long-term sustainable trend level, and when significant economic imbalances have accumulated, which is the situation in which the U.S. economy finds itself at the beginning of 2019. The difficulty in forecasting involves pinpointing the turning point. Almost no one does this well. Recession forecasting models are relatively crude and reliable forecast lead times have been very short. What we know from experience is that recessions occur when the economy becomes overheated and the Fed is tightening. Both of these phenomena are in place. The timing of recession onset, however, depends upon human psychology. And, when human psychology is highly positive, it tends to feed upon itself and sustain momentum, often for longer than seems possible. While consumer sentiment was at a very high level at the beginning of 2019, business and investor confidence had deteriorated from peak levels reached in 2018. Strong consumer optimism based on rising employment and incomes could outweigh business and investor anxieties. Alternatively, investor driven financial market volatility could erode consumer confidence and slow spending growth with the consequence of hastening recession onset.

In any event, 2019 looks set to be a volatile year with a higher than normal chance that outcomes by the end of the year will be significantly different and worse than outcomes expected at the beginning of the year.

1. **U.S. Outlook – August Update:** (The paragraphs that follow provide a summarized snapshot of the economy’s performance month-by-month)

   Calm returned to financial markets in *January and February* as investors realized that economic growth remains strong and the threat of recession is not imminent. The reversal in sentiment was helped by soothing words from Federal Reserve officials and reinforced by the FOMC’s monetary policy change from a tightening bias, foreshadowing two rate hikes during 2019, to a neutral bias, indicating a pause in rate changes and a data-dependent patience in determining
whether the next rate change is an increase or decrease. The partial government shutdown in January will reduce 2019 Q1 GDP growth but about 75% of the loss will be recouped in Q2. All employment indicators remain very strong and the labor market is operating above full capacity; however, inflationary pressures remain quiescent. Real GDP growth is in a slowing trend but remains well above full potential. Measures of business, consumer, and investor sentiment weakened some in January but remain near cyclical highs.

Data reported in March, particularly for the months of December and January, were very weak, reflecting the consequences of 2018’s year-end stock market correction and the partial government shutdown. 2019 Q1 GDP growth is likely to be less than 1% and could be negative, reflecting a slowdown in consumer spending and decreases in inventories, which outgrew demand in 2018 Q3 and Q4. Bad weather and the partial government shutdown will also depress 2019 Q1 GDP growth. Preliminary March data support the story of slowing U.S. growth but do not suggest that recession is imminent. Most forecasters believe that 2019 Q1 weakness will be temporary and not a precursor of recession. The consensus expects that more accommodative monetary policy and reacceleration of Chinese growth during 2019 will boost the pace of U.S. GDP growth modestly above the long-term potential level.

Data reported in April and early May mostly covering March were stronger and benefitted from easier monetary policy and strong stock market performance. Surprisingly, the Advance Estimate of 2019 Q1 GDP came in at a very strong 3.18%, although the Private Domestic Estimate of GDP, which eliminates inventories, net exports and government and is a better GDP measure of trend growth, was a very weak 1.09%. Payroll employment grew strongly in March and April, but household employment declined in both months. This divergence makes no sense and is most likely due to sampling error. The likely interpretation is that the labor market is not as strong as it appears from March and April data and the decline in the U-3 unemployment rate to 3.58% in April to a 50-year low probably artificially depressed by statistical noise. Wages continue to edge up but to a lesser extent than implied by employment growth and the low unemployment rate. The core inflation rate declined, perhaps due to transitory factors as suggested by Federal Reserve Chair Jerome Powell, but the failure of inflation to rise seems more fundamentally based. On April 30th, the S&P 500 stock average hit an all-time high, completely recovering from the 2018 Q4 nearly 20% drop in stock prices. Consumer confidence recovered to cyclical highs in April, reflecting the stock market’s stellar performance. However, the ISM manufacturing and services indices weakened in April. The major event in early May was the collapse in U.S.-China trade negotiations and the reciprocal implementation of
higher tariffs. The sense of optimism that rebuilt during Q1 and April is now threatened and is a reminder that major risks still bedevil the U.S. and global economies. While the Fed’s monetary policy has resulted in easier financial conditions and reduced the likelihood of recession in the near term, recession risk remains elevated.

Data reported in **June** covering April and May reflected continued strong consumer and business sentiment. However, survey measures of business activity are weakening and business activity, which has been above potential, is moderating. Stock prices recovered about 70% of May’s decline; however, interest rates continued to fall. The bond market now expects the Fed to cut the federal funds rate at least 50 basis points in 2019 and another 25 basis points in early 2020, beginning as soon as the FOMC meeting in July. May’s employment report was extremely disappointing, but employment growth, averaging over the first five months of the year, remains above long-term potential. Growth in wages continues to trend up gradually, but remains at a moderate level. Inflation measures continue to be soft. However, tariffs will boost inflation temporarily later this year, but as indicated by falling inflation expectations, this development is not expected to a permanent impact on inflation. Global growth continues to slow, with weakness particularly apparent in Europe, Japan and emerging economies.

**July** – global growth is clearly weakening and policy responses have yet to shift momentum in a more favorable direction. In the U.S. the manufacturing sector has slowed to stall speed. Slowing global growth and increased uncertainty has led to a slowing in business investment growth and housing investment continues to languish. Employment growth remains strong and unemployment continues to decline below the natural rate. However, the rate of growth, particularly as measured by total hours worked, is slowing gradually, a trend that seems likely to continue. The slowdown in the rate of growth in total hours worked is occurring and a slowing in the recent acceleration in wage rates is possible. And as this occurs, growth in consumer spending, which accounts for nearly 70% of GDP will also gradually slow. The slowdown in consumer spending could accelerate, if consumer sentiment wavers, but recent survey data indicate strong consumer optimism. Overall, the portrait that recent economic data are painting is one of continued strong economic activity in the U.S. which is gradually slowing to the underlying long-term potential rate of growth. For the time being the risk of recession remains minimal.

**August** – investor anxiety about the possibility of recession escalated rapidly in early August. A prominent cause was the failure of U.S.-China trade negotiations followed immediately by additional tariffs and other retaliatory measures by both countries. This came on top of slowing global growth. Then, Germany and China
reported disappointing economic activity. Certainly, the mood of investors has changed quickly for the worse. Whenever this has occurred in the recent past, soothing words from the Federal Reserve and easier monetary policy has diffused the apparent crisis of confidence. The underlying strength of the economy assisted in reversing sentiment. The economy is still very strong, but some cracks are emerging. The manufacturing sector is struggling and business investment is weakening (growth was negative in Q2). Growth in hours worked has slowed significantly over the past year and is now lower than the growth rate in the number of people employed. What this portends is that growth in take home pay is slowing, even while growth in the average hourly wage rate is rising. This trend will lead eventually to slower growth in consumer spending. Government investment spending has supported economic growth in recent quarters but this stimulus is on track to begin fading. While economic growth is still above its long-run potential level, it is likely to continue to decelerate to its potential level. The question is whether, as most forecasters expect, growth will match its potential level and stay there or whether it will continue to slow well below potential.

- The Treasury yield curve inverted slightly from March 22\textsuperscript{nd} to March 28\textsuperscript{th}; research indicates that the spread between the yields on the 3-month Treasury bill and the 10-year Treasury note is the most reliable indicator of impending recession when it turns negative – yield curve inversions have preceded every recession by approximately 12 months, but not every yield curve inversion has been followed by recession; however, as optimism rose about stronger U.S. growth, this spread turned modestly positive, averaging +9 basis points between March 29\textsuperscript{th} and May 10\textsuperscript{th}, but inverted again on May 13\textsuperscript{th}, as markets reacted to the failure of U.S. – China trade negotiations and both countries lifted tariffs substantially, and has remained inverted through August 16\textsuperscript{th}, averaging -12 basis points, but the inversion worsened in August to over 30 basis points.
- NY Fed analysis pegged the odds of a recession in the next 12 months at 32\% in August.
- Duke CFO survey 2019 Q2: 48\% expect recession to begin by 2020 Q2, up from 38\% in 2019 Q1; 69\% expect recession to commence by the end of 2020.
- Leading Economic Indicators (LEI) index was flat in January; +0.1\% in February; +0.2\% in March to 111.7; +.1\% in April to 111.8; unchanged in May at 111.8; down -.3\% to 111.5 in June, a stagnating
trend that suggests U.S. growth is likely to decelerate in coming months
✓ 2019 Q1 Fed Financial Stability Report stated that investor appetite for risk is elevated; corporate debt is at historically high levels, but risk is limited by low leverage limited funding risk; household debt is modest and well supported by income
✓ Financial conditions, which spiked in 2018 Q4, eased gradually during the first half of 2019 to the level that prevailed during Q2 and Q3 2018; easier financial conditions are correlated with stronger growth in economic activity; financial conditions tightened in late July and August and, if sustained, will negatively impact business and consumer confidence and, with a lag, economic activity
✓ Evercore ISI’s mid-July survey of retailers, industrials, and real estate builders, indicated record high inventories; industrials which especially high; companies will focus over Q3 and Q4 in bringing inventories down and this will depress real GDP growth

2019 real GDP Y/Y growth projections range from 2.4% to 2.6%, still well above the long-term potential growth rate of 1.6% to 2.0%. The FOMC’s central tendency Q4/Q4 projections range from 2.3% to 2.5%. (Q4/Q4 projections are highly dependent upon potential anomalies in Q4 data; therefore, Y/Y estimates, which average all four quarters, usually are more stable estimates.) Risks are tilted to the downside because of slowing international growth, tightening monetary policy and financial conditions, elevated political uncertainty, a heightened potential for declines in consumer, business, and investor optimism.

✓ 2018 Q4 “Final Estimate” = 2.1% (revised down from 2.2%); 2018 = 2.9%
✓ B of A 2019 original real GDP forecast = 2.7%, revised = 2.25%; GS original = 2.4%; revised = 2.3%; Bill’s original BASE scenario = 2.47%, revised = 2.33%; Bill’s original STRONG GROWTH scenario = 2.53%, revised = 2.33%
+ Final Q1 GDP annualized growth = 3.1%; however, netting out growth in inventories and slowing growth in imports reduced the final estimate of GDP to 1.3%, which is a more reliable indicator of the fundamental trend in GDP growth
- 2019 Q2 advance estimate = 2.1%; 2019 Q2 preliminary estimate: GS = 1.9%; B of A = 1.8%
- 2019 Q3 estimate: GS = 2.1%; B of A = 2.1%
## Composition of 2019 and 2018 Quarterly GDP Growth

<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal Consumption</td>
<td>2.85%</td>
<td>.78%</td>
<td>.97%</td>
<td>2.34%</td>
<td>2.70%</td>
<td></td>
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<tr>
<td>Private Nonresidential</td>
<td></td>
<td></td>
<td>- .08%</td>
<td>.60%</td>
<td>.64%</td>
<td>.29%</td>
<td>1.04%</td>
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<tr>
<td>Residential</td>
<td></td>
<td></td>
<td>-.06%</td>
<td>-.04%</td>
<td>-.18%</td>
<td>-.16%</td>
<td>-.15%</td>
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<tr>
<td>Inventories</td>
<td>-.86%</td>
<td></td>
<td></td>
<td>.53%</td>
<td>.07%</td>
<td>2.14%</td>
<td>-1.20%</td>
</tr>
<tr>
<td>Net Exports</td>
<td></td>
<td></td>
<td>-.65%</td>
<td>.73%</td>
<td>.35%</td>
<td>-2.05%</td>
<td>.67%</td>
</tr>
<tr>
<td>Government</td>
<td>.85%</td>
<td></td>
<td></td>
<td>.50%</td>
<td>-.07%</td>
<td>.36%</td>
<td>.44%</td>
</tr>
<tr>
<td>Total</td>
<td>2.05%</td>
<td></td>
<td></td>
<td>3.10%</td>
<td>1.08%</td>
<td>2.92%</td>
<td>3.50%</td>
</tr>
<tr>
<td>Final Sales</td>
<td>2.91%</td>
<td></td>
<td></td>
<td>2.57%</td>
<td>1.01%</td>
<td>.78%</td>
<td>4.70%</td>
</tr>
<tr>
<td>Private</td>
<td>2.06%</td>
<td></td>
<td></td>
<td>2.07%</td>
<td>1.08%</td>
<td>.42%</td>
<td>4.26%</td>
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<tr>
<td>Private Domestic</td>
<td>2.71%</td>
<td></td>
<td></td>
<td>1.34%</td>
<td>1.43%</td>
<td>2.47%</td>
<td>3.59%</td>
</tr>
</tbody>
</table>

### Real GDP Growth – Alternative Measures

(annual percentage change)

![Graph showing Real GDP Growth – Alternative Measures](image-url)
Year-Over-Year Growth Rates for Components of Real GDP

<table>
<thead>
<tr>
<th>Component</th>
<th>Second Quarter 2019</th>
<th>First Quarter 2019</th>
<th>Fourth Quarter 2018</th>
<th>Third Quarter 2018</th>
<th>Second Quarter 2018</th>
<th>First Quarter 2018</th>
<th>Fourth Quarter 2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP Componet Weight</td>
<td>69.47%</td>
<td>2.79%</td>
<td>2.94%</td>
<td>3.00%</td>
<td>3.08%</td>
<td>2.83%</td>
<td>2.65%</td>
</tr>
<tr>
<td>Personal Consumption Private Investment</td>
<td>14.53%</td>
<td>12.05%</td>
<td>8.35%</td>
<td>8.27%</td>
<td>6.90%</td>
<td>5.33%</td>
<td>8.26%</td>
</tr>
<tr>
<td>Nonresidential Residential Inventories</td>
<td>3.15%</td>
<td>23.3%</td>
<td>69.3%</td>
<td>52.2%</td>
<td>-6.8%</td>
<td>105.4%</td>
<td>219.4%</td>
</tr>
<tr>
<td>Net Exports</td>
<td>-5.13%</td>
<td>-12.05%</td>
<td>8.35%</td>
<td>8.27%</td>
<td>6.90%</td>
<td>5.33%</td>
<td>8.26%</td>
</tr>
<tr>
<td>Exports</td>
<td>13.41%</td>
<td>5.32%</td>
<td>3.85%</td>
<td>4.37%</td>
<td>4.98%</td>
<td>4.56%</td>
<td>4.82%</td>
</tr>
<tr>
<td>Imports</td>
<td>-18.54%</td>
<td>-0.60%</td>
<td>2.28%</td>
<td>3.02%</td>
<td>4.31%</td>
<td>4.30%</td>
<td>3.68%</td>
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<td>Government</td>
<td>17.26%</td>
<td>1.98%</td>
<td>1.81%</td>
<td>1.71%</td>
<td>1.54%</td>
<td>1.11%</td>
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<tr>
<td>Total</td>
<td>100.0%</td>
<td>2.65%</td>
<td>2.87%</td>
<td>2.93%</td>
<td>3.00%</td>
<td>2.82%</td>
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<tr>
<td>Final Sales</td>
<td>99.51%</td>
<td>2.30%</td>
<td>2.73%</td>
<td>2.84%</td>
<td>3.02%</td>
<td>2.74%</td>
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<tr>
<td>Private</td>
<td>82.25%</td>
<td>2.37%</td>
<td>2.92%</td>
<td>3.08%</td>
<td>3.33%</td>
<td>3.09%</td>
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<tr>
<td>Private Domestic</td>
<td>87.36%</td>
<td>2.89%</td>
<td>3.22%</td>
<td>3.36%</td>
<td>3.53%</td>
<td>3.21%</td>
<td>3.01%</td>
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- Momentum in GDP growth peaked in 2018 Q3 and has slowed progressively over the last 3 quarters; however, growth in “Private Domestic” GDP remains well above its long-run potential.
- GS’s U.S. Current Activity Indicator (CAI), which is a proxy for real GDP growth, was 1.8% in December 2018, above GS’s long-term potential level of 1.6%, but below its forecast 2019 GDP growth rate: January = 1.3%; February = 2.3%; March = 2.3%; April = 1.9%; May = 1.6%; June = 1.1%; July = 1.3%; August = 1.5%
- Chicago Fed National Activity monthly Index (3-month trend) indicates that economic activity is decelerating to a below trend pace: December = -.01 (.07); January = -.13 (.04); February = -.63 (-.26); March = -.05 (-.27); April = -.73 (-.47); May = -.03 (-.27); June = -.02 (-.26) (positive values indicate above trend growth and vice versa for negative values)
- LEI was flat in January; +0.1% in February; +0.2% in March to 111.7; +.1% in April to 111.8; unchanged in May at 111.8; -3% in June to 111.5, a stagnating trend that suggests U.S. growth is likely to decelerate in coming months
### Real GDP Growth Forecasts

(Year-over-year average)

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**Bill’s Scenarios**

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<tr>
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*Q4 to Q4 basis sensitive to specific Q4 values and may diverge from year-over-year trend.

- **Real GDP output gap**, which moved from negative to positive (overheated) during 2018, will become even more positive, which means the economy will overheat to an even greater extent during 2019. By the end of 2019 the positive output gap should be in a range of 0.9% to 1.1%. (CBO will revise its...
estimates of potential real GDP growth sometime during 2019, which could change the end of the year forecast output gap.)

✓ 2018 output gap = 0.68% (0.30% prior to July 2019 National Income Accounts revisions which increased the level of GDP), indicating the economy was operating slightly above its potential

✓ CBO revised 10-year economic projections in January lowered the forecast year end 2019 output gap from 1.08% to 0.87%, but July GDP revisions for the past several years lifted the projected year-end output gap to .90% (CBO will update its economic projections in late August, which will revise the size of the estimated output gap)

✓ Original year-end 2019 output gap in Bill’s BASE scenario = 1.16%; revised = 0.96%

✓ 2019 Q1 gap = .83%; Q2 = .87%

- **Potential structural rate of real GDP growth** will remain well below actual real GDP growth during 2019 in a range of 1.5% to 1.6%. Long-term potential real GDP growth will edge up in coming years to between 1.7% and 2.0%, based upon improving productivity.
  ✓ CBO original 2019 potential growth = 2.10%; revised = 2.13% (CBO projections will be updated on August 21st)
  ✓ Bill’s 2019 original estimate of potential growth was between 1.5% and 1.6%; revised estimate of 2019 potential growth increased to 2.0% because of strong employment and productivity growth
  ✓ Long-term potential GDP growth: CBO = 1.75%; B of A = 1.70%; GS = 1.75%; FOMC = 1.80% to 2.00%; Bill’s BASE scenario = 1.85%; Bill’s STRONG GROWTH scenario = 2.05%

- **Productivity** should remain relatively stable in 2019 in a range of 1.2% to 1.4% compared to an expected 1.3% gain in 2018; it will continue to fall well short of the historical 2.1% average.
  ✓ 2018 = 1.30% (4-quarter moving average); 1.03% YoY
  ✓ Bill’s 2019 original forecast = 1.37%; revised = 1.81% (4-quarter moving average)
  ✓ B of A 2019 original forecast = .88%; revised = 1.78% (4-quarter moving average)
  - 2019 Q1 annualized productivity = 3.5%, four-quarter moving average = 1.39%, YoY = 1.67%; Q2 annualized productivity = 2.3%, four-quarter moving average = 1.43%, YoY = 1.79%
Payroll and household employment growth should slow during 2019 because employment is well above its long-term natural level and should converge closer to the natural rate of growth in the labor force which is about 80,000 to 100,000 new entrants monthly; however, given the strength in expected economic activity during 2019, payroll and household employment growth should average between 160,000 and 190,000 per month; risks are tilted to the downside

- Payroll employment grew 222,833 (219,833 before annual benchmarking adjustments) monthly during 2018
- BLS benchmarked payroll employment in February but the impact on 2018 payroll employment was negligible – average 2018 monthly payroll employment increased 3,000
- GS 2019 monthly payroll original forecast = 156,000, revised = 161,000; B of A original = 178,000, revised = 157,000; Bill’s BASE original = 177,500, revised = 148,833
  - January 2019 payroll = 312,000; February = 56,000; March = 153,000; April = 216,000; May = 62,000; June = 193,000; July = 164,000; YTD monthly average = 165,143; (notice the month-to-month volatility, but the monthly average is within the forecast range)
- Census Bureau updated population controls in February which reduced the number of people eligible to work by 800,000, the number in the labor force by 506,000, the number employed by
488,000, and the number unemployed by 18,000 – the adjustments did not impact the employment participation ratio or the unemployment rate

- Household employment grew 199,500 monthly during 2018 (240,167 monthly excluding a downward adjustment of 488,000 for 2018 stemming from updating of population controls)

- Household employment: January = 236,000; February = 255,000; March = -200,000; April = -103,000; May = 112,000; June = 248,000; July = 282,000; YTD monthly average = 118,571; (household monthly average tracking considerably below payroll monthly average – the two measures should converge over time)

- Employment participation should edge down slightly from its December 2018 level during 2019 in a range of 62.75% to 63.05%, as strong employment growth offsets the longer-term declining trend in participation due to demographically-embedded retirements of baby boomers.
The participation rate was 63.05% in December 2018; January = 63.21%; February = 63.15%; March = 63.03%; April = 62.80%; May = 62.83%; June = 62.92%; July = 63.02%; average YTD = 62.99%; stronger than expected participation rate in January and February due to return of discouraged workers to the labor force and prime age women, particularly those under the age of 35 with professional degrees.

**Labor-Force-Participation and Eligible-Employment-to-Population Ratios (U-3 Measure)**

- **Unemployment rate** should edge down slightly from 3.9% to between 3.2% and 3.6%.
  - January = 4.0%; the increase in the unemployment rate in January occurred because the increase in the participation rate caused the labor force (495,000) to increase much more than the number employed (236,000); February = 3.8%, reflecting a 300,000 decreased in the number unemployed; March = 3.8%; April and May = 3.6%; June and July = 3.7%
  - The 4-week moving average of unemployment claims hit a new multi-decade low of 206,000 in late-April; this is all the more indicative of a very tight labor market considering that total employment has growth considerably since the previous low mark in claims in 1969; the 4-week moving average edged up to 214,000 in the week ending August 10th.
• *Wage rate* growth, reported by BLS for all employees and non-supervisory and production workers, should edge up slightly during 2018 to a range of 3.2% to 3.6%.

+ Hourly wage growth for all employees (12-month moving average) was 2.88% in December 2018; January = 2.92%; February = 2.99%; March = 3.05%; April = 3.11%; May = 3.15%; June = 3.20%; July = 3.25%
Hourly wage growth for production and nonsupervisory employees (12-month moving average) was 2.85% in December 2018; January = 2.94%; February = 3.03%; March = 3.10%; April = 3.17%; May = 3.23%; June = 3.29%; July = 3.35%
Evercore ISI employee pricing power (average of temporary and permanent) index = 68.6 in December (a value above 50 indicates increasing pricing power); January = 69.0; February = 68.9; March = 68.1; April = 68.4; May = 69.0; June = 70.2; July = 72.0; August 16th = 72.5

✓ GS’s wage tracker was 3.04% in Q4 2018; January = 3.2%; February = 3.4%; March = 3.0%; April = 2.8%; May = 3.1%; June = 3.4%

✓ The Atlanta Federal Reserve Bank wage tracker was 3.8% in December 2018; January = 3.7%; February = 3.4%; March = 3.5%; April = 3.6%; May = 3.7%; June and July = 3.9%

✓ 2018 Q4 employment cost index increase: total = 2.89%; wages and salaries = 3.00%; benefits = 2.75%

- 2019 Q1 employment cost index YoY increase: total = 2.79%; wages and salaries = 2.82%; benefits = 2.65%; 2019 Q2: total = 2.78%; wages and salaries = 2.96%; benefits = 2.26%

✓ Evercore ISI’s April survey of CFOs indicated that growth rates in wages are expected to increase in a net of 30% of companies compared to 54% in the previous survey conducted in October 2018; 84% of companies expect to increase employee wages over the next 12 months compared to 86% in October
• **Nominal consumer disposable income** growth, measured on a 12-month moving average basis should increase during 2019 primarily because of rising wage rates; growth should be in a range of 5.0% to 5.5%.
  ✓ Nominal disposable income grew 6.12% in 2018 (revised up substantially in the July 2019 revisions of National Income Accounts from the previously reported 4.90%)
  ✓ January = 6.02%; February = 5.92%; March = 5.82%; April = 5.70%; May = 5.59%; June = 5.43% (12-month moving average); trend is decelerating

![Nominal Disposable Income and Consumption Growth](image)

• **Nominal consumer spending** growth on a 12-month moving average basis should slow during 2019 because of slower employment growth, much slower growth in wealth (financial assets and housing), moderating levels of optimism; growth should be in a range of 4.25% to 4.75%.
  ✓ Nominal consumer spending grew 5.28% in 2018 (revised up in the July 2019 revisions of National Income Accounts from the previously reported 4.89%)
  ✓ January = 5.21%; February = 5.11%; March = 5.06%; April = 4.98%; May = 4.84%; June = 4.69% (12-month moving average); spending growth is slowing, but below income growth, which means the saving rate is increasing
### Real Personal Consumption Growth Rate Forecasts

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<td>1.92</td>
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- **Auto sales** should decline during 2019
  - Auto sales averaged 17.21 million units during 2018; January = 16.71 million units; February = 16.52 million; March = 17.26 million; April = 16.48 million; May = 17.39; June = 17.13; July = 16.82; average YTD = 16.90
  - Domestic auto production is forecast to decrease 15% in 2019 Q1 from 2018 Q4 to 11.1 million units, which is still above the January
sales rate; preliminary 2019 Q2 production estimate = 11.3 million units

- **Retail sales** growth should be stable or slightly slower during 2019
  - Retail sales grew 3.1% in 2018 (quarterly average YoY), after peaking at 6.1% in July 2018
  - Retail sales declined 2.3% in the month of December, reflecting adverse impacts of financial market volatility, rebounded 1.6% in January, fell 0.7% in February, adversely impacted by delays in tax refunds; rose 2.0% in March, rose 0.3% in April, 0.4% in May, 0.3% in June and 0.6% in July
  - The quarterly YoY average annual growth rate: January = 2.4%; February = 1.7%; March = 2.6% April = 3.0%, May = 3.4%, and June and July = 3.2%; financial market turmoil in 2018 Q4 and its impact on consumer confidence were major factors in the spending slowdown in January and February; financial markets improved in January and February and this helped boost spending growth in March, April, May and June; August’s stock market turmoil could depress retail sales in September
  - 38% of retailers reported in mid-July that inventories were “too high” or “a little too high” compared to 15% that indicated that inventories were “a little too low” or “too low”; this large gap of 23%, combined with slower employment and income growth, could depress economic activity in coming months

- **Consumer confidence** in 2019 should decline from historically high levels in 2018.
  - Conference Board = 126.6 in December 2018; January = 121.7, almost all the decline was in expectations sub-index, possibly influenced by the partial government shutdown, while the current conditions index was stable; February = 131.4, reflecting a strong rebound in the expectations component; March = 124.2, reflecting a sharp decline in the present economic conditions index; April = 129.2; May = 131.3, reflecting improvements in both the current conditions and expectations components; June = 124.3, reflecting declines in both the current conditions and expectations components; July = 135.7, reversing the decline in current conditions and expectations that occurred in June
  - University of Michigan = 95.3 in December 2018; January = 91.2, which was worse than expected and a two-year low; February = 93.8;
March = 98.4; April = 97.2; May = 100.0; June = 98.2 (decline in expectations outweighed increase in current conditions); July = 98.4 (increase in expectations offset decline in current conditions); August = 92.1 (decline reflects trade war escalation and stock market decline)

- Bloomberg = 59.6 in December 2018; January = 58.2; February = 61.0; March = 62.1; April = 60.4; May = 60.8; June = 62.6; July = 64.7 (highest since 2000 and close to a record high); August 3rd = 62.9
- Evercore ISI = 54.5 in December 2018; January = 54.2; February = 53.2; March and April = 54.2; May = 53.4; June = 53.4; July = 52.9; August 16th = 53.0

- A CNN consumer 2019 Q1 poll found that 71% of Americans believe that economic conditions are good; the peak rating for this poll was 89% in 1999; in 2008 only 8% agreed that economic conditions were good

- **Consumer credit growth** should slow during 2019; however revolving credit growth could rebound from 2018’s depressed level which was caused primarily by cuts in personal income taxes.
  - Total consumer credit 12-month moving average: December 2018 = 4.8%; January and February = 4.8%; March = 4.9%; April and May = 5.1%; June = 5.3%
  - Revolving consumer credit 12-month moving average: December 2018 = 3.5%; January and February = 3.2%; March = 3.3% (possible rebound in growth did not occur in 2019 Q1, but rebounded in Q2); April = 3.8%; May = 4.2%; June = 4.6%
  - Non-revolving credit 12-month moving average: December 2018 = 5.3%; January = 5.3%; February = 5.4%; March, April, May, and June = 5.5%
  - Federal Reserve Senior Loan Officer Opinion Survey: residential mortgage underwriting standards were unchanged in 2019 Q2, and demand strengthened; underwriting standards tightened on credit cards but were unchanged for other types of consumer loans, and demand was stronger for all categories

- **Household personal saving rate** will rise as growth in disposable income exceeds growth in consumer spending; the saving rate should improve to a range of 6.5% to 7.5%.
  - The average consumer saving rate in 2018 = 7.69% (6.68% prior to July 2019 revisions in National Income Accounts data)
- January = 8.27%; February = 8.81%; March = 8.35%; April = 8.12%; May = 8.00%; June = 8.12%; YTD = 8.28%

**Stock prices**, as measured by the S&P 500 average, should be between 5% higher or 15% lower: on the downside reflecting pressure on profit margins, slower revenue growth, rising labor costs and higher short-term interest rates; on the upside reflecting growth friendly fiscal policy and investor optimism.

- Analysts expect S&P 500 earnings per share to increase 2% (revised down from 4%) from $162 in 2018 to $164.89 (revised down from $168) in 2019; analyst forecasts for 2019 are edging lower
- NFIB earnings trend weakening (% higher - % lower): peak May 2018 = +3%; December = -7%; January = -5%; February = -9%; March = -8%; April = -3%; May = -1%; June = -7%; July = -4%
- Stock prices YTD: January = 7.9%; February = 11.1%; March = 13.1%; April = 17.5%; May = 9.8%; June = 17.3%; July = 18.9% (record high for S&P 500 on July 15th); August 20th = 15.7%
- National Income Account revisions in July reversed the previously reported growth in corporate profits to a decrease

**Business activity** will weaken slightly but remain positive with both the PMI manufacturing and service indices averaging above 50.

- PMI manufacturing index = 54.3 in December 2018; January = 56.6, reflecting increases in the orders and production sub-indices;
February = 54.2; March = 55.3; April = 52.8 (pulled down by weaker new orders, production and employment); May = 52.1 (increase in new orders and employment; decrease in production); June = 51.7 (new orders sub-index declined to 50.0, but production and employment increased); July = 51.2 (new orders strengthened but employment and production weakened); IHS Markit Flash U.S. Manufacturing PMI fell from 50.6 in June to 50.0 in July, the weakest level since September 2009 as the economy was just beginning to recover from the Great Recession

+ PMI non-manufacturing (services) index = 58.0 in December 2018; January = 56.7; February = 59.7, which was contrary survey evidence to the “slowing growth” story; March = 56.1; April = 55.5; May = 56.9 (business activity, orders and employment increased from April); June = 55.1 (new orders and employment softened); July = 53.7 (employment increased but new orders and business activity decreased)

+ NFIB optimism index = 104.4 in December; January = 101.2; February = 101.7; March = 101.8; April = 103.5; May = 105.0; June = 103.3; July = 104.7

+ GS analyst index = 61.3 in December; January = 67.9; February = 59.0; March = 53.2; April = 53.5; May = 49.2 (contraction, but equates to trend growth and a composite manufacturing and non-manufacturing PMIs of approximately 53 – extreme weakness in new orders and shipments in May and June); June = 50.3; July = 50.8 (new orders continued to be depressed but shipments rebounded; materials prices weakened for the first time in 2019)

✓ Manufacturers “very” or “somewhat” upbeat about their company’s outlook: 2018 Q4 = 88.7%; 2019 Q1 = 89.5%; (average past 9 quarters = 91.8%)

✓ Duke CFO Optimism Index: 2018 Q4 = 66.4; 2019 Q1 = 64.6; 2019 Q2 = 65.7 (50 dividing line between expansion and contraction

✓ 64% of industrial companies reported in mid-July that inventories were “too high” or “a little too high” compared to only 7% that indicated that inventories were “too low”: the gap of 57% is a record high and implies that a major liquidation of inventories will occur in coming months and this will depress economic activity in Q3 and perhaps Q4

• Industrial production will increase in 2019 but at a slower rate than in 2018.
The industrial production index was 110.6 in December 2018, up 4.0% over December 2017; January = 110.1, up 3.8%; February = 109.6, up 3.4%; March = 109.7, up 2.9%; April = 109.0, up 1.9%; May = 109.2, up 1.6%; June = 109.4, up 1.2%; July = 109.2, up 1.1%

- **Capacity utilization** will be stable to slightly higher, but will remain below 80%, which is traditionally considered to be a capacity level that stimulates investment spending.
  - Capacity utilization = 79.5% in December 2018; January = 79.0%; February = 78.5; March = 78.4%; April, May and June = 77.8%; June = 77.9%; July = 77.5%

- **Business investment** inflation-adjusted spending growth should decrease as U.S. economic growth slows; growth in 2019 is expected to be in a range of 3.0% to 3.5% (the average for the past 20 years = 3.24%).
  - 2018 = 6.36%
  - 2019 first half annual rate = 1.88%
  - GS original 2019 forecast = 3.3%; revised = 2.9%; (forecast update reduced because of expected impacts of the trade war with China); (GS’s capital expenditures tracker has eased from nearly 10% to slightly less than 5% in the past year)
  - B of A original 2019 forecast = 3.5%; revised = 2.8%
+ Evercore ISI capital goods index was 64.3 in December (acceleration above 50; deceleration below 50); January = 62.4; February = 60.9; March = 60.3; April = 59.9; May = 57.6; June = 55.3; July = 54.4; August 9th = 54.1 (expansion continues, but at a decelerating rate)

✓ NFIB net percentage planning to increase capital spending in next three to six months: December 2018 = 25%; January = 25%; February, March and April = 27%; May = 30%; June = 26%; July = 27%

✓ NFIB percentage reporting making capital outlays in the past six months: December 2018 = 61%; January = 60%; February = 58%; March = 60%; April = 58%; May = 64%; June = 54%; July = 57%

Real Private Investment (Residential and Nonresidential) Growth Rate Forecasts

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*Average 1999-2019

**Real private investment = 2.25% for 1999-2019

✓ According to an Evercore ISI survey, the negative impact of failed U.S. China trade talks could be substantial

✓ Favorable tax changes have had limited impact on business investment spending; expectations for economic growth are the principal driver and falling sales expectations are leading to lower business investment spending
Oil and gas rig count in the U.S. has been declining gradually during 2019, reflecting slowing growth in demand; softening in oil prices in July and August could accelerate this decline.

**Business credit** growth should continue to expand near levels experienced in 2018, but credit spreads should widen.
- Federal Reserve Senior Loan Officer Opinion Survey: underwriting standards for business loans for large and medium-sized companies were unchanged in 2019 Q2 and demand was unchanged; underwriting standards for business loans were eased for smaller firms and demand weakened; underwriting standards tightened on commercial real estate loans – demand was unchanged for commercial real estate and multi-family loans but weakened for construction and development loans.
- BAA and high yield bond credit spreads blew out during December’s severe market correction; by early June spreads had tightened but not to the level preceding December’s blow out.

**Residential housing investment** should decline in 2019 in a range of 0% to -3%; housing starts should grow in a range of -6.5% to +3.0%.
- 2018 residential housing investment = -1.47%
- Housing investment declined at an annual rate of -1.3% in the first half of 2019
- GS 2019 original housing investment forecast = -2.1%; revised = -1.4% with improvement in the second half of 2019 to an annual growth rate of 6.0% by Q4 due to lower interest rates and demographic trends favoring increased home ownership.
- B of A 2019 original housing investment forecast = -1.3%; revised = -2.2%
- 2018 housing starts = 3.4% (single family = 2.4%; multi-family = 5.6%)
- GS housing starts 2019 original forecast = -0.7%; revised = 2.8%
- B of A housing starts 2019 original forecast = 2.9%; revised = 1.9%
- Bill’s BASE housing starts 2019 original scenario = -6.4%; revised = -1.7%
- 12-month moving average change in housing starts: July = -2.4%
- The NAHB December 2018 housing index = 56 (value greater than 50 means is favorable); January = 58; February and March = 62; April = 63; May = 66; June = 64, July = 65, signaling stabilization in housing after a rough 2018 Q4; August = 66
Evercore ISI’s homebuilder index = 50.3 in December; January = 49.9, February = 52.1; March = 53.6; April = 55.9; May = 56.1; June = 54.9; July = 53.1; August 16th = 56.6 (50 is the dividing line between expansion and contraction)

Existing home sales peaked in November 2017, but higher interest rates and higher housing prices depressed affordability and caused sales to decline during 2018 (most adversely affected were investor, vacation and second homes); sales fell further in January, but rebounded strongly in February, declined in March and April, rose in May, declined in June; over the past 12 months sales of existing homes have declined -2.2%

New home sales were unchanged in 2018 from 2017; annual rate of change (12-month moving average): January = -1.6%; February = -2.7%, March =-2.9%, April = -3.1%; May = -4.3%; June = -3.9%

Household formation continues to rise gradually – the five-year annual average = 1.27 million in 2019 Q1; 2018 Q4 = 1.23 million; most recent four-quarter average = 1.58 million

Home ownership rate was 64.3% in 2019 Q1 and 64.2% compared to 64.6% in 2018 Q4, reversing slightly the modest improvement that had occurred over the past two years from the low point of 63.1% in 2016 Q2

43% of real estate builders reported in mid-July that inventories were a “little too high” compared to 29% that indicated inventories were a “little too low”: this gap of 14%, while not extremely large, will be a head wind to real estate investment in coming months

Residential housing prices should rise more slowly in 2019 in a range of 2% to 4%.

S&P Core Logic Case Shiller national housing price index 2018 = 4.55%; 20-city index = 4.0%

FHFA housing purchase-only price index 2018 = 5.9%; January = 5.7%; February and March = 5.2%; April = 5.4%; May = 5.0%

GS 2019 housing price original 2019 forecast = 3.1%; revised = 3.2%

B of A 2019 original housing price 2019 forecast = 3.2%; revised 2019 = 3.3%

Bill’s BASE scenario 2019 housing price forecast original = 2.2%; revised = 2.2%

- S&P Core Logic Case Shiller national housing price index peaked at 6.5% in March 2018 and has trended down since then: January = 4.2%; February = 3.9%; March = 3.6%; April = 3.5%; May = 3.4%
• S&P Core Logic Case Shiller 20-city housing price index peaked at 6.6% in March 2018 and has trended down since then: January = 3.4%; February = 2.8%; March = 2.6%; April = 2.5%; May 2.4%

**Cumulative Real Housing Price Appreciation Relative to Long-Term Trend (1975-2019)**

- *Trade deficit* should rise in 2019 in a range of 3.0% to 3.5%.
  - December 2018 trade deficit = 3.05%
  - January = 3.02%; February = 3.00%; March = 3.02%; April = 3.01%; May = 3.06%; June = 3.10%
  - Annual growth rates in both goods imports (9.7%) and exports (9.2%) peaked in October 2018; annual growth in imports slowed to 4.4%, in June and growth in exports slowed to 2.6%, reflecting the impact of tariffs on prices; further declines in growth of goods imports and exports are expected
  - Evercore ISI reported in January slightly diminished concern about the impact of tariffs: of businesses surveyed negative = 30% and positive = 9%, compared to 39% and 4%, respectively, in October
  - In ISM’s semi-annual survey, released in May, 59% of manufacturers reported that tariffs have led to increases in the prices of goods produced and one-third indicated that tariffs have resulted in disruptions of supply chains

• The *dollar’s value* on a trade-weighted basis should be stable to slightly stronger as U.S. economic growth exceeds global growth, in a range of 0.0 to 3.0%.
• **Oil prices** are likely to remain in the long-term range of $40 to $55 that balances global supply and demand because weaker global growth and abundant and flexible supply in the U.S. which will continue to constrain prices.

  - West Texas Intermediate oil prices averaged $49.52 per barrel in December 2018
  - WTI: January = $51; February = $55; March = $58; April = $64; May = $61; June = $55; July = $58; early August = $55; average YTD = $57
  - OPEC approved a 9-month extension in July until March 2020 of a reduction in supply of 1.2 million barrels per day; without this reduction, oil prices would be much lower and within the original forecast range

• **Monetary policy** the Federal Reserve might raise the federal funds rate twice during 2019 in 25 basis point increments or it might decrease rates once.

  - FOMC – 2 increases; Revised FOMC – 1 decrease; January FOMC meeting changed policy to neutral – data dependent, March meeting dot plot indicated no increases in 2019 and only one increase in 2021; June meeting indicated 1 decrease in 2019 and 1 increase in 2021; July FOMC meeting implemented a 25 basis cut – more decreases are likely during the remainder of 2019 with most forecasters expecting two more rate cuts
  - Market forward yield curve – three decreases in 2019 and two to three cuts in 2020
  - Original GS – pause early in the year followed by 2 increases; revised GS – 2 decreases in Q3 2019 (July and September) and 1 decrease in Q4 (GS believes these reductions will be temporary and will be followed by 4 rate increases in 2020 and 2021)
  - Original B of A – 2 increases in Q1 and Q2; revised B of A – 2 decreases in Q3 (September) and 1 decrease in Q4

  - My econometric model projects 3 increases during the remainder of 2019 – this will not happen; my model indicates, based on historical relationships, what the federal funds rate would be given the current strength of employment and economic activity; the model does not
include the effects of deteriorating global economic conditions, the trade war or the accumulating negative impact of global monetary policies on interest rates; notably, in the long run, my model’s interest-rate projections agree with those of the market.

Number of Federal Funds Rate Changes of 25 Basis Points

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<tr>
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*FOMC, B of A, GS and CBO rates are equilibrium estimates
#Bill’s estimates are forecasts which peak above the projected equilibrium rate

**Federal Funds Rate Forecasts**

Fed Beige Book – the July 17th report covered the period from mid-May to early July; growth continued at a modest pace with little change in momentum from the previous report, although there was a
net downgrade of 2 (4 downgrades and 2 upgrades) of the 12 districts; manufacturing was flat, job growth was modest, consumer spending was modestly positive, auto sales were flat but fell in some districts, prices were stable to down slightly in some districts, wage growth was modest to moderate (Fed nomenclature for describing economic activity: flat, slight, modest, moderate, strong, in ascending order)

✓ The FOMC reduced the federal funds rate by 25 basis points to a range of 2.00 – 2.25% at its July 31st meeting (2 members were opposed to the cut and dissented) and characterized the cut as insurance against downside risks; weakening global growth, a slowdown in U.S. manufacturing, trade policy, and inflation stuck below the 2% target (“the domestic inflation shortfall has continued”; “global disinflationary pressures persist”) were cited as reasons for the rate cut; the policy statement left some ambiguity about the FOMC’s view about additional rate cuts (statement language was watered down from “closely monitor” developments to “continue to monitor”); market developments since the meeting likely will force the FOMC to cut rates in September and probably again in October

✓ The FOMC terminated balance sheet shrinkage at the beginning of August which will have a moderately favorable impact on market liquidity

- **Total inflation** measures (CPI and CPE) will rise in 2019 as the impacts of the 2018 rise in energy prices fall out of the indices: total CPI will rise 1.6% to 1.8% and total CPE will rise 1.7% to 1.9%.

✓ December 2018 total CPI = 1.95%; January = 1.52%; February = 1.50%; March = 1.86%; April = 2.00%; May = 1.80%; June = 1.66%; July = 1.81% (a little stronger than expected)

- December 2018 total CPE = 1.78%; January = 1.41%; February = 1.31%; March = 1.40%; April = 1.49%; May = 1.39% (weaker than expected); June = 1.35%

✓ GS total 2019 CPI original forecast = 1.6%; revised = 1.7%

✓ B of A total 2019 original CPI forecast = 1.5% (average for year), revised = 1.7%; total original PCE forecast = 1.6%; revised = 1.5%

✓ FOMC total 2019 original PCE forecast = 1.8% to 2.1%; revised = 1.8% to 1.9%

✓ Market expected long-term CPI inflation rate, embedded in TIPS (Treasury Inflation Protected Securities) = 2.02% (approximately
1.72% CPE) in December 2018; August 19th = 1.76% (CPE equivalent = 1.46%)

- Consumer long-term expected CPI (University of Michigan Survey): December 2018 = 2.6%; January = 2.6%; February = 2.3%; March = 2.5%; April = 2.3%; May = 2.6%; June = 2.3%; July = 2.5%; August = 2.6% (this survey consistently reports higher inflation expectations than TIPS, so what is important to watch is directional changes in consumer expectations)

- Markit’s PMI diffusion index of output prices plummeted to 48.9 in May, which was the weakest level in over a decade and indicates deflation

**Core PCE Inflation Forecasts**

- **Core inflation** (CPI and CPE) will rise slightly from 2018’s level in response to an economy operating above full capacity: core CPI will rise 2.2% to 2.4% and core CPE will rise 1.9% to 2.1%.

  - December core CPI = 2.21%; January = 2.15%; February = 2.08%; March = 2.04%; April = 2.07%; May = 2.00% (core CPI is weaker than expected but should return to the forecast range by the end of the year); June = 2.13%; July = 2.21%

  - December core CPE = 1.97%; January = 1.77%; February = 1.62%; March = 1.48%; April = 1.54%; May = 1.48%; June = 1.60%

  - GS original core 2019 CPI forecast = 2.3%, revised = 2.2%; original core PCE = 2.0%; revised core PCE = 1.7%; (GS’s core CPE tracker
has risen to 2.0%, implying prevalence of upside pressures on inflation, including the impact of tariffs on imported goods

✓ B of A core 2019 CPI original forecast = 2.2%, revised = 2.3%; core PCE original = 2.0%, revised = 1.8%
✓ FOMC core 2019 PCE original forecast = 2.0% to 2.1%; revised =1.9% to 2.0%

Core PCE Inflation Forecasts

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Bill’s Scenarios

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Core CPI Inflation Forecasts

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*CPI † total index; over the past 20 years core CPI has averaged 30 basis points higher than core CPE

- The 10-year Treasury rate is likely to remain relatively stable during 2019 and fluctuate during the year in a range between 2.00% and 3.00%. Strong real GDP and employment growth would push the rate toward the top end of the range; soft inflation and/or heightened financial instability would push the rate toward the bottom end of the range.

✓ The 10-year Treasury Note yield was 2.69% on the last trading day of 2018
- The 10-year Treasury Note yield was 1.55% on August 20th
The Treasury yield curve inverted slightly from March 22\textsuperscript{nd} to March 28\textsuperscript{th}; research indicates that the spread between the yields on the 3-month Treasury bill and the 10-year Treasury note is the most reliable indicator of impending recession when it turns negative – yield curve inversions have preceded every recession by approximately 12 months, but not every yield curve inversion has been followed by recession; however, as optimism rose about stronger U.S. growth, this spread turned modestly positive, averaging +9 basis points between March 29\textsuperscript{th} and May 10\textsuperscript{th}, but inverted again on May 13\textsuperscript{th}, as markets reacted to the failure of U.S. – China trade negotiations and both countries lifted tariffs substantially, and has remained inverted through August 16\textsuperscript{th}, averaging -13 basis points, but widening to over -30 basis points in August.

**State and local investment spending** growth will be modest within a real growth rate of 1.0\% to 1.5\%.

- State and local investment spending rose 1.0\% in 2018
- **Original GS 2019 forecast = 1.4\%; revised forecast = 1.7\%**
  - State and local investment spending grew at an annual rate of 3.3\% in the first half of 2019
- State and local tax receipts stopped growing in January, but increased slightly in February and more strongly in March and April, then revenue growth slowed slightly in May: Evercore ISI diffusion
index: December = 57.2; January = 50.0; February = 51.6 – softening driven primarily by declines in estimated income tax payments and weakening sales tax revenues; 25% of states reported increases in revenue and 19% reported decreases in February; March = 54.5; April = 63.1 (sharp improvement driven primarily by increases in estimated personal income taxes, stemming from changes in the Tax Cuts and Jobs Act and strong financial market performance); May = 61.7 (personal income tax receipts softened and sales tax revenues strengthened); June = 59.5 (sales tax revenues weakened, particularly in states won by President Trump in the 2016 election); July = 56.2

Federal and State and Local Investment Spending Growth Rates

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<tbody>
<tr>
<td>Federal</td>
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<td>0.43</td>
<td>0.78</td>
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<td>State and Local</td>
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<td>2.65</td>
<td>0.65</td>
<td>0.99</td>
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<tr>
<td>Total Government*</td>
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<td>0.70</td>
<td>1.72</td>
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<td>GS Federal</td>
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<td>3.29</td>
<td>1.25</td>
<td>0.00</td>
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<tr>
<td>GS State and Local</td>
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<td></td>
<td></td>
<td>1.70</td>
<td>0.52</td>
<td>0.00</td>
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<td>0.00</td>
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<tr>
<td>B of A Total</td>
<td></td>
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<td></td>
<td></td>
<td>2.41</td>
<td>2.29</td>
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Bill’s Scenarios

<table>
<thead>
<tr>
<th></th>
<th>BASE Total</th>
<th>STRONG GROWTH Total</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>2.37</td>
<td>1.74</td>
</tr>
<tr>
<td></td>
<td>2.38</td>
<td>1.89</td>
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*1999-2019 annual average growth rate = 1.54%
The federal budget deficit as a percentage of nominal GDP will increase from fiscal year 2018’s level of 3.83% to a range of 4.5% to 5.0%. Stronger than expected growth would push the deficit toward the lower end of the range.

CBO fiscal 2019 deficit: original = 4.62%; revised = 4.22% due to stronger revenue growth (tariffs and individual income taxes – stronger personal income growth), reduced overseas military spending and emergency spending for disaster recovery, return to prior lower spending caps, and lower interest rates on the federal debt.

GS fiscal 2019 deficit original forecast = 4.72%; revised = 4.36%

B of A fiscal 2019 deficit: original = 4.69%; revised = 4.38%, but higher than CBO’s projection due primarily to the elimination of “return to prior spending caps” assumption.

Bill’s BASE scenario fiscal 2019 deficit: original = 4.73%; revised = 4.29%

12-month deficit-to-GDP ratio: January = 4.39%; February = 4.48%; March = 4.18%; April = 4.40%; May = 4.69%; June = 4.37%; July = 4.53%

CBO will update its 10-year economic projections on August 21\textsuperscript{st}
Federal investment spending rose 2.9% in 2018; GS 2019 original forecast = 3.0%, revised = 3.3%; 2018 increase and expected 2019 increase boosted significantly by Tax Cuts and Jobs Act of 2017 and
lifting of congressional spending caps in 2018; after 2020, annual increases are expected to decrease substantially

+ Federal investment spending grew at an annual rate of 5.0% in the first half of 2019, but is expected to slow during the remainder of the year as the benefits of the Tax Cuts and Jobs Act wane

☑ President Trump submitted to Congress in March a fiscal 2020 budget proposal for $4.75 trillion, which Congress ignored

☑ In late July Congress passed legislation which lifted spending caps for fiscal years 2020 and 2021, resulting in a 3.8% increase in discretionary spending in fiscal 2020 which was higher than CBO’s assumption of 2.5%; the legislation also suspended the federal debt ceiling until July 31, 2021, which will push the actual effective debt of the debt ceiling until after the 2020 presidential election, assuming no recession occurs in the next few months
2. **Rest of the World: July Assessment:** Global economic activity, which peaked in mid-2018, continues to slow in early 2019 ("+" indicates growth above potential or improving trend; "-" indicates growth below potential or worsening trend). The OECD global leading indicator index continued to decline at the end of 2018, driven by Europe, the U.S., and particularly China.

- OECD global leading economic activity indicator peaked at 101.13 in November 2017 and has declined steadily since then:
  - December 2018 = 99.75; January = 99.62; February = 99.49; March = 99.37; April = 99.25; May = 99.13; June = 99.00 (lowest level since the April 2013)

  ✓ GS's global current activity indicator (CAI, which is a proxy for real GDP growth) was 3.1% in December 2018, below the potential growth rate of 3.5% and the expected 2019 global growth rate of 3.5% to 3.7%

- Global January CAI = 3.1%; February = 3.2%; March = 3.3%; April 2.9%; May = 2.9%; June = 2.4%; July = 2.6%

  ✓ CAI for major advanced economies was 1.7% in December 2018, and was decelerating, but still above the potential growth rate of 1.4%

  + January major advanced economies CAI = 1.2%; February and March = 1.4%; April = 1.5%; May = 1.1%; June = 0.7%

  ✓ CAI for emerging markets (which includes China) was 4.2% in December 2018, and was decelerating and below the potential growth rate of 5.1%

- January emerging markets CAI = 4.4%, February = 4.7%; March = 4.8%; April = 4.0%; May = 4.3%; June = 4.1%

- Economic activity slowed in Europe during the first quarter; Italy is in recession and growth was barely positive in Germany; Q2 is likely to be worse

- JP Morgan Global Manufacturing PMI decelerating – peak: December 2017 = 54.4; January = 50.8; February and March 2019 = 50.6; April = 50.4; May = 49.8; June = 49.4 (contraction – declining new orders, exports and employment); July = 49.3

  ✓ The mood at the Davos World Economic Forum in late January was "subdued, cautious and apprehensive; Fareed Zakaria commented: “There is no great global political crisis, yet people speak in worried tones about the state of democracy, open societies and the international order;” globalization has given way to a new era of sluggishness, or “slowbalization,” which will lead to stronger ties to regional blocs as supply chains seek sources closer to home;
mounting debt in developed countries could lead to financial panic; increasing social and political division risks economic calamity; growing discomfort with corporate influence over society, particularly Big Tech; it seems unlikely that the downbeat mood has change much as the year has progressed

✓ B of A has concluded that policy shocks (trade war, Brexit, U.S government shutdown, French yellow jackets, etc.) over the past year have depressed confidence and growth expectations and reduced capital spending, which leads to a self-fulfilling outcome of slower growth

✓ Growth in global trade decelerated during 2018 to 1.7%, deceleration is continuing in 2019

✓ Global financial conditions, after improving in early 2019, have tightened to a level near what occurred during 2018 Q4’s severe financial market correction

• **Global growth** is likely to slow from 3.8% in 2018 to 3.5% to 3.7% in 2019. Global economic momentum decelerated in the last few months of 2018 and this should carry over into 2019. However, downside risks, such as U.S. trade policies and an emerging global monetary tightening cycle, and, of course the risks of political turmoil in Europe, the Middle East, Korea, and possibly elsewhere could contribute to even slower growth.

✓ **GS 2019 global growth** original forecast = 3.6%; revised = 3.4%

✓ **B of A 2019 global growth** original forecast = 3.6%; revised = 3.2%

  (developed economies lowered from 2.0% to 1.8%; emerging economies reduced from 4.6% to 4.5%)

✓ 2019 Q2 annualized rate of global real GDP growth = 3.4%

✓ IMF 2019 global growth **original** forecast = 3.7%; revised = 3.3%

✓ **JP Morgan Global Manufacturing Index:** December = 51.4; January = 50.8, February and March = 50.6%; April = 50.4; May = 49.8 (contraction – declining new orders, exports and employment); June = 49.4; July = 49.3

✓ GS estimates that the trade war will reduce global growth by 0.4% in Q3 and Q4 with lessening impacts in 2021

• **Global inflation** is expected to fall from 3.3% in 2018 to 2.8% in 2019, reflecting slowing global growth.

✓ B of A **original** forecast = 3.0%; revised = 3.1%

• **European growth** will slow to 1.4% (B of A) to 1.6% (GS) from 2018’s 1.8%
pace. Tighter monetary policy and political uncertainty pose downside risk to
growth.

- B of A original forecast = 1.4%; revised = 1.1%
- GS original forecast = 1.6%; revised = 1.0%

**Euro area** GDP grew 0.2% in 2018 Q4; 2019 Q1 GDP growth = 0.3%
(1.2% annual rate); year over year growth was 1.1% in Q2

- **Euro area** CAI = 1.4% in December, and was decelerating, but well
above potential growth of 1.0%
  - January **Euro area** CAI = 0.9%; February and March = 1.0%; April =
  0.8%; May = 0.9%; June = 0.8%; below potential growth rate
  - Manufacturing activity in the **Eurozone** contracted during February –
May with Germany experiencing a large decline in orders, exports
and output; **Euro area** manufacturing index: February = 49.3; March =
47.5; April = 47.9; May = 47.7; June = 47.6; July = 46.5 (recession
level); services index: February = 52.8; March = 52.7

- IMF and OECD **Euro area** real GDP growth forecasts for 2019 = 1.9%,
but are stale and do not reflect loss of economic momentum at the
end of 2018; EC’s revised 2019 GDP forecast = 1.3%
  - **Italy’s** GDP declined in both Q3 and Q4 2018, qualifying for a
technical recession; industrial production declined 5.4% during 2018
with most of the decline concentrated in the production of consumer
goods; January CAI = -0.8%; February = -0.9%; March = -0.4%; April =
-0.3%; GS forecast -0.3% GDP growth in 2019; B of A 2019 forecast =
0.2%; May = 0.0%; June = -0.7%; industrial production rose 1.0% QoQ
in Q1 following quarterly declines in 2018, but fell 1.0% in March and
0.7% in April; manufacturing PMI is contracting – April = 49.1, May =
49.7; services PMI is weakening – April = 50.4, May = 50.0
  - **Germany’s** GDP: 2018 Q3 = -0.2%, 2018 Q4 = 0.0%, 2019 Q1 = 1.6%;
January CAI = 0.6%; February = 1.0%; March = 0.4%; April = 0.1%;
May and June = -0.1%; B of A 2019 GDP forecast = 1.0%; GS = 0.7%;
IMF = 0.8%
  - Manufacturing output in **Germany** fell 0.1% in Q1 but industrial
production rose 0.5%; Germany’s manufacturing index plummeted to
a recession level of 44.7 in March and 44.5 in April and continued to
contract in May, June and July, but the services index remained
above 50; industrial production fell -1.5% in June and was down 5.1%
June 2018
  - **France’s** manufacturing index: February = 51.5, March = 49.8;
services index: February = 50.2, March = 48.7; B of A 2019 GDP
forecast = 1.1%; however, on the positive side, preliminary evidence
indicates that President Macron’s structural reforms may be having a beneficial impact on French economic activity

- B of A 2019 GDP forecast for Spain = 2.0%
- Money supply has declined 4.0% over the past year

- **European total inflation** in 2019 will decline from 1.7% in 2018 to 1.0% in 2019 (B of A), reflecting falling energy prices and slowing economic growth: **core inflation** will ebb slightly lower from 1.0% to 0.9%; both measures will remain considerably below the ECB’s 2.0% target.
  - Core inflation stuck at 1.0% but risks are to the downside; May = 1.0%
  - B of A original total inflation forecast = 1.0%; revised = 1.2%
  - GS core inflation forecast = 0.9%; total inflation = 1.3%
  - Long-term inflation expectations: June 18th = 1.21%
  - German 10-year bund: June 18th = -0.30%

- **European financial markets** should be volatile, reflecting rising political uncertainty, tighter monetary policy and financial conditions, and slowing economic growth.
  - Tracking the U.S., volatility moderated in European financial markets in Q1, rose in May, fell in June and early July and fell in late July and early August
  - Concerned about slowing EU growth, ECB eased monetary policy in early March by extending long-term liquidity facilities to banks and indicating no change in negative interest-rate policy during 2019; the market response was tepid and bank stock prices declined; the ECB liberalized and reduced the cost of liquidity loans to members and extended its no rate increase guidance to mid-2020 at its June meeting; realistically the ECB has little left in its toolkit to stimulate economic activity; the ECB is expected to announce additional easing at its upcoming meeting
  - Yields on German 10-year bunds continue to decline and were -0.65% on August 16th

- **European political dysfunction, populism and nationalism** will continue to build in many countries.
  - No new developments of consequence have occurred early in 2019; however, this may change if European economic activity continues to deteriorate; for example, the French yellow jackets activism has faded, although it has not disappeared; Italy’s populist government
had backed away from confrontation with the EC, but this could re-emerge if the recession in Italy deepens (Italy’s 2019 Q1 GDP rose, but forecasters still expect little growth during 2019)

- European Parliament elections, which took place between May 23 and 26, could elevate political uncertainty, particularly in Italy and Germany; the U.K.’s “Brexit Party” won a plurality of votes cast in the U.K., adding further to the political fragmentation in U.K. politics
- Italy’s governing coalition of the right-wing League and anti-establishment Five Star Movement was on the verge of collapse in August as the League filed a “no confidence” motion in parliament in an attempt to force new elections; however, other parties are maneuvering to block voting on a “no confidence” motion; if a motion is passed, it would lead either to the formation of a new government or parliamentary elections in which the League believes it would have an advantage
- According to Stratfor, European politics has entered a period of fragmentation with mainstream centrist parties losing ground to new competitors on the left and right
- In Spain, no party won a majority in the April 28th elections, but the Socialist Party improved its position by winning 123 of 350 seats in Parliament; overall election results showed growing political polarization and party fragmentation

- **U.K. growth** is expected to be relatively stable in a range of 1.2% (B of A) to 1.5% (GS and IMF) in 2019 compared to 1.2% to 1.3% in 2018; Brexit and political disarray are downside risks.
  - CAI = 0.8% in December 2018 and was decelerating; potential growth = 1.3%
  - CAI = 0.7% in January; February = 1.0%; March = 0.6%; April = 1.4%; May = 0.6%; June = -0.3%
  - 2018 Q4 GDP growth was 0.2% (0.8% annualized), which was weaker than expected; without inventory building, growth would have been even weaker
  - B of A original 2019 GDP forecast = 1.2%
  - GS original 2019 GDP forecast = 1.5%; revised = 1.1%
  - 2019 Q1 GDP increased 0.5% (2.0% annualized), but the strong performance was caused by inventory stockpiling and strong consumer spending, neither of which are likely to be sustained during the remainder of 2019; Q2 GDP growth is expected to be negative; Q2 GDP = -0.2%
- BOE decreased its 2019 GDP forecast from 1.7% to 1.2%
- Service PMI declined to a recession level 48.9 in March
- The EU extended the Brexit deadline from March 29th to October 31st; this extends uncertainty about the parameters of the eventual deal or no deal and is likely to depress U.K. economic activity; Boris Johnson replaced Theresa May as Prime Minister in July which increased the odds of a “no-deal” Brexit; there is increasing likelihood that a national election will be called either before the Oct. 31st deadline by a no-confidence vote, or after the Oct. 31st deadline by the Prime Minister with the intent to force a “hard Brexit”

- **China’s GDP growth** is expected to slow to a range of 6.1% (B of A); 6.2% (GS) and 6.3% (OECD) in 2019 from 6.6% in 2018; risks are to the downside as China’s economy transitions from industrial to consumer emphasis, as President Xi continues to emphasize the goal of a “better quality life” over GDP growth, and as global growth slows and the U.S. pursues restrictive trade and technology policies.
  - China’s official 2019 GDP growth target is a range of 6.0 to 6.5%
  - IMF raised its 2019 GDP growth forecast from 6.2% to 6.3% in early April
  - B of A 2019 original GDP forecast = 6.1%; revised = 6.0%; GS original = 6.2%, revised = 6.5%
  - CAI = 5.5% in December 2018 and was decelerating; potential growth = 6.1%
    - CAI = 5.5% in January; February = 6.0%; March = 6.7%; April = 5.8%; May = 5.9%; June = 5.6%
  - 2018 growth = 6.6%; however Q4 2017 to Q4 2018 growth = 6.4%, indicating a modest slowing
  - 2019 Q1 YoY growth = 6.4%; Q2 YoY = 6.2%; however, June data were strong, which may signal that stimulus is having a favorable impact on economic activity
    - Industrial production, fixed investment, housing starts, retail sales, and credit growth resumed a gradual slowing trend in June indicating decelerating momentum in China’s economic activity
  - Housing sales remain strong and continue to provide support to economic growth, but equipment investment growth is negative and infrastructure investment growth is about 3%
  - Land sales are slowing which reduces revenue to fund infrastructure development, but this source of funding is declining in importance
Fiscal and monetary policy adjustments are intended to stabilize economic growth, not stimulate it; Premier Li Keqiang said on March 5th that the government would respond to the growth slowdown by cutting taxes, easing burdens on the private sector and giving markets a bigger role

- New fiscal stimulus – tax cuts and infrastructure investment – expected to amount to 3% of GDP ($370 billion); however, tax cuts will benefit only a small percentage of the population; the benefits of lower taxes will be offset by stricter enforcement
- People’s Bank of China easing credit availability through a bond swap facility
- Regulatory policy is aimed at preventing cash hoarding at state owned enterprises which has been limiting credit availability at private businesses

Credit growth has reaccelerated
Shanghai stock index rose 30% in the first quarter and was up 31% on April 17th; Shenzhen was up 41% at its peak on April 17th, reflecting improving liquidity, as credit growth reaccelerated to an annual rate of 10.6% in January, optimism about a trade deal with the U.S., and expectations that China’s growth will reaccelerate during 2019; however, since mid-April the Shenzhen stock index declined 16% as it became clear that a trade deal between the U.S. and China might not occur

- **China’s leadership** will continue implementing economic reforms gradually; financial and political stability will be maintained.
- **Regulation of unconventional credit products and environmental issues continues despite negative impacts on growth; monetary and fiscal policy adjustments are designed to offset these negative effects** – the PBoC removed a policy reference to deleveraging in February

- **Japan’s** growth is expect to improve modestly from 0.7% in 2018 to a range of 0.9% (GS and IMF) to 1.1% (B of A) in 2019; total inflation is expected to fall from 1.1% (B of A) in 2018 to 0.4% in 2019 (B of A); core inflation is expected to rise from 0.4% in 2018 (GS) to 0.8% in 2018 (GS).
  - **B of A original forecast = 1.1%; revised = 1.0%**
  - **GS original forecast = 0.9%; revised = 0.5%**
CAI = 1.2% in December 2018, slightly above the potential growth rate of 0.9%; January CAI = 1.0%; February = 0.1%; March = -0.5%; April = 1.3%; May = 0.1%; June = -0.6%

2019 Q1 GDP = 2.2%, an apparently strong performance, but was actually much weaker due to a substantial decrease in imports

Employment was strong and nominal income increased 3.2% and part-time wages increased 2.6% during 2018, however, declining corporate profits is contributing to smaller wage gains in 2019; consumer confidence is trending lower; office vacancy rates continue to fall; capital spending rose a strong 5.7% in 2018 and growth accelerated in 2018 Q4

- Economic activity has slowed substantially so far in 2019; machine tool orders plunged 42% in June from the 2018 peak
- Slowing global growth is depressing manufacturing and industrial production and is expected to weigh on corporate earnings; corporate profits fell 22.1% in 2018 Q3 and Q4 from the 2018 Q2 level
- Manufacturing activity is declining: May = 49.8; June = 49.3; July = 49.4
- Job openings slowed substantially during 2018 and were up only 0.5% in January 2019 over January 2018 – slowing job openings have been preceded past recessions; measures of wage growth have weakened during 2019
- Odds of recession starting in 2019 are increasing and Q2 data may indicate negative growth

Value Added Tax is scheduled to be raised from 18% to 20% in October and could adversely impact consumer spending and assure recession

Trade tensions between Japan and South Korea are elevated but economic consequences are uncertain

2019 inflation forecast = 0.4%

India should continue to experience relatively strong real GDP growth in a range of to 7.0% to 7.5% in 2019. A potential downside risk in 2019 is the defeat of Prime Minister Modi in parliamentary elections.

CAI = 6.8% in December 2018; potential growth rate = 7.2%
- CAI = 6.7% in January; February = 6.6%; March = 6.5%; April = 3.4%; May = 6.2%; June = 6.5%

GS 2019 GDP forecast = 7.5%; B of A = original 7.4%, revised = 7.0%

Prime Minister Modi’s BJP party won a resounding Parliamentary election victory
• **Emerging market countries, including China,** should experience slower growth of 4.8% in 2019 compared to 4.9% (B of A) in 2018.
  - **B of A original forecast = 4.8%; revised = 4.3%**
  - **CAI = 4.2% in December 2018 and was decelerating; potential growth = 5.1%**
  - **CAI = 4.4% in January; February = 4.7%; March = 4.8%; April = 4.0%; May = 4.3%; June = 4.1%**
  - The IHS Markit Emerging Markets Manufacturing Index move into contraction territory in June = 49.9 (new orders contracted; output and exports stagnated); July = 50.1
  - **CAI = 1.7 % in December 2018 compared to potential growth = 2.2%**

• **Brazil** will benefit from improved political stability; Brazilian growth is expected to improve from 1.2% (GS) to 1.5% (B of A) in 2018 to 2.6% (GS) to 3.5% (B of A) in 2019
  - **CAI = 3.8% in January; February = 3.9%; March = 1.1%; April = 2.6%; May = 1.2%; June = 0.1%**
  - **B of A original GDP forecast = 3.5%; revised = 0.7%**
  - **GS original GDP forecast = 2.6%; revised = 1.7%**

• **Russia** will continue to grow well below potential in 2019; growth is expected to range from 1.5% (OECD) to 1.8% (GS) compared to potential growth of 3.3%.
  - **GS original GDP forecast = 1.8%; revised = 2.1%**
  - **B of A GDP original forecast = 1.7%; revised = 1.2%**
  - **CAI = 2.4% in December 2018**
  - **CAI = 2.1% in January; February = 1.1%; March = 2.6%; April = 1.1%; May = 0.3%; June = -0.2%**

• **Venezuela’s** economy continues to implode; regime change is unlikely, however, unless the military intervenes.
  - **The political situation continues to deteriorate but Maduro remains in power with the support of the military, even though many nations including the U.S., do not recognize Maduro as the legitimate president; as time passes, the economy continues its plunge; oil exports have dwindled to a trickle**
  - **The U.S. imposed oil sanctions with the intent to expedite regime change; initially the impact of sanctions has fallen most heavily on**
the general populace and to date has been unsuccessful in forcing regime change

- **Saudi Arabia** needs high oil prices to balance its budget
  - Slowing global growth has depressed oil demand and weakened prices; it is unlikely Saudi Arabia will be able to boost prices by cutting production
3. **U.S. Risks** – stated in the negative relative to the forecast; “+” **risk realized**, “-“ **risk not realized**

- **U.S. real GDP growth** falls short or exceeds expectations; falling short is the more serious risk as this is likely to happen only if recession occurs.
  - **Risk not realized**, Q1 GDP grew 3.1%, which was above the expected overall 2019 growth rate, but was inflated by unsustainable growth in inventories and net exports. Q2 growth of 2.1% was lower, but growth in private domestic GDP, which eliminates the effects of inventories, net exports and government, was a much stronger 2.7%; while full year growth is expected to fall short of beginning of the year expectations, it should still be slightly above long-term potential in a range of 2.2% to 2.4%

- **GDP positive output gap** rises less than expected or turns negative; this is likely to happen only if recession occurs.
  - **Risk not realized**, positive output gap rose from .68% to .83% in Q1 and .87% in Q3, but is on track to be slightly less than the forecast adjusted for CBO revised projections and data revisions which increased the level of real GDP; CBO increased its forecast for potential growth slightly in January which implies that the positive output gap will not expand quite as much as originally expected; CBO will revise its economic projections on August 21st, which might increase the level of potential GDP and, thus, decrease the size of the positive output gap

- **U.S. productivity** falls below the bottom end of the forecast range.
  - **Risk not realized**, Q1 and Q2 productivity growth was stronger than expected, raising the probability that productivity in 2019 will exceed the forecast range of 1.2% to 1.4%

- **U.S. employment growth** is slower or faster than expected; slower growth is the more serious risk as this is likely to happen only if recession occurs.
  - **Risk not realized**, average payroll employment growth over the first six months of 2019 was within the forecast range, but average household employment growth was below the forecast range; (this is a perverse result because payroll and household employment usually grow by close to the same amounts, which raises the question of which indicator is more reliable in gaging the tightness
of the labor market; the discrepancy is likely to narrow in coming months.

- **The trend of strong monthly payroll employment gains, which are above the natural rate of growth in the labor force, has been possible because the participation rate has increased bringing more people into the labor force; this trend is not likely to be sustained (the participation rate ticked down in March and April, was stable in May, and rose slightly in June and July)**

- **Employment participation rate** falls below the bottom of the forecast range rather than remaining relatively stable or rising modestly.
  - **Risk not realized**, Participation was above the upper end of the projected range in January and February, reflecting re-entry of people into the labor force who had either been discouraged or disinterested; the participation rate was at the top end of the forecast range in March and solidly within the forecast range in April, May, and June, but close to the top end again in July

- **U.S. unemployment rate** rises above the forecast range; this is likely only if recession occurs.
  - **Risk not realized**, because of the unexpected increase in the participation rate, the unemployment rate in January was above the expected range; however, it fell in February, March and April, was stable in May at the top end of the forecast range, and was slightly above the forecast range in June and July

- **U.S. hourly wage rate growth** is lower or higher than the forecast range; lower wage growth is the more serious risk.
  - **Risk not realized**, wage growth rose in January, February, March, April, May, June, and July and is at the bottom end of the forecast range; wage growth is expected to continue rising during 2019 and be well within the forecast range by the end of the year (wage growth for nonsupervisory and production workers was within the forecast range in May, June and July)

- **Nominal U.S. consumer disposable income** increases less or more than expected; a less than expected increase is the more serious risk.
  - **Risk not realized**, 12-month moving average in January, February, March, April and May was above the forecast range and in a gradual declining trend, but moved under the top end of the range in June
• **Nominal U.S. consumer spending** increases less or more than expected; a less than expected increase is the more serious risk.
  - *Risk not realized*, 12-month moving average in January, February March, April and May was slightly above the forecast range, but is a gradually decelerating trend; growth was within the forecast range in June and is expected to weaken slightly in coming months and be well within the forecast range by the end of the year

• **Auto sales** are considerably less than expected.
  - *Risk not realized*, auto sales were expected to decline in 2019 and through July that expectation is unfolding; the 12-month moving average rate of growth has decelerated from 2.5% in May 2018 to -0.1% in July 2019

• **Retail sales growth** is lower than expected.
  + *Risk realized*, 12-month moving average rate of growth decelerated from 6.1% in July 2018 to 3.2% in July 2019; but, depending upon continuation of strong employment growth and financial markets performance, growth in spending is expected to strengthen in coming months

• **Measures of consumer confidence** drop substantially.
  - *Risk not realized*, measures declined modestly in January, improved in February, March, April, and May, were mixed in June and July; preliminary August survey data reflect a modest weakening confidence

• **Consumer saving rate** rises or falls more than expected; a higher than expected saving rate is the greater risk because that is likely only in the event of recession.
  + *Risk realized due to substantial data revisions, which raised personal income and saving*; the saving rate for the first six months of 2019 was above the forecast range and is likely to remain so during the remainder of the year

• **U.S. stock prices** fall more than or rise more than the forecast range.
  + *Risk realized*, stock prices rose strongly in January, February and March and hit a new high at the end of April; prices weakened in May but recovered in June and hit a new all-time high on July 3rd: prices
weakened in August as investors’ worries about slowing global growth and the consequences of the trade war with China escalated; However, price gains remain substantially above the 2019 forecast range

- **U.S. business activity** contracts or expands more than expected; contraction is the more serious risk.
  - **Risk not realized**, changes in survey measures through the first seven months of the year were small, some stronger, but most slightly weaker; growth in manufacturing activity is decelerating, but services remain strong

- **Industrial production** rises less than expected.
  + **Risk realized**, through July industrial production was slightly lower than in December

- **Capacity utilization** falls.
  + **Risk realized**, capacity utilization was lower in July than in December

- **U.S. private business investment** does not improve as much as or more than expected; falling short of expectations is the more serious risk.
  + **Risk realized**, business investment was weak in the first half of 2019; trade uncertainty and slowing global growth will probably continue to depress business investment growth during the remainder of 2019 to a level below the bottom end of the forecast range

- **Growth rates in U.S. residential housing investment and housing starts** are less than or more than expected; below expectations is the more serious risk.
  - **Risk not realized**, housing investment declined in the first half of 2019; housing starts also declined modestly in the first half of 2019; both measures were within the forecast range; activity might improve during the remainder of 2019 as affordability improves in response to lower interest rates and smaller increases in home prices but both measures are still likely to be negative for the year and within the original forecast range

- **U.S. residential housing price increases** are stronger than or less than expected; stronger than expected price growth would be an indication of price
speculation, while slower than expected price growth would most likely be
caused by recession or deteriorating consumer confidence.
- **Risk not realized**, as expected, price increases have been
decelerating over the first five months of 2019 and are within the
forecast range; further deceleration is likely over the remainder of
the year

- **U.S. trade deficit** does not widen as much as expected.
  - **Risk not realized**, trade deficit over the first six months of the year
    was slightly above the bottom end of the forecast range

- **Value of the dollar** falls rather than remaining stable or rising modestly.
  - **Risk not realized**, trade-weighted value of the dollar has been
    relatively stable, decreasing 0.4% YTD through July

- **Oil prices** rise above or fall below the expected range; prices below the
  forecast range is the greater concern because it would be indicative of global
  recession.
  + **Risk realized**, prices moved slightly above the top of the forecast
    range in March – July, but were just below the top end of the range in
    early August; prices have averaged slightly above the top end of the
    forecast range over the first seven months of the year

- **U.S. monetary policy** tightens more than 50 basis points, spawns financial
  market uncertainty and contributes to global financial instability.
  + **Risk realized**, but not because the FOMC has tightened policy;
    slowing global growth and trade anxieties forced the FOMC to cut
    rates in July, but the market expects additional cuts to ward off the
    possibility of recession; in effect, the FOMC is “behind the curve”
    and monetary policy is too tight in the market’s judgment
  ✓ The market expects two cuts in the federal funds rate by the end of
    the year and two more cuts in 2020 and 2021
  ✓ Early in 2019 there was discussion that the FOMC might revise
    monetary policy to assure inflation averages 2.0% over the cycle,
    which could result in no increases in the federal funds rate for an
    extended time; this is no longer an item of discussion as events have
    rendered this theoretical discussion moot; increasingly it looks like
    the FOMC will not be able to push inflation up to 2% after the
    temporary inflation boost from tariffs passes
✓ FOMC ended balance sheet shrinkage at the beginning of August 2019 which will relieve pressure on liquidity; however, liquidity may remain tight for a couple of months while the U.S. Treasury replenishes its cash reserve following the suspension of the binding debt ceiling in late July.

- Financial conditions tighten and cause financial market volatility.
  + Risk realized, in July and August weakening global growth, trade policy, an inverted yield curve and fear of recession combined to tighten financial conditions and foster increased market volatility.

- U.S. inflation falls or rises more than expected.
  + Risk realized, core inflation measures have been weaker than expected; core CPI and CPE inflation have been well below the bottom end of the forecast range so far in 2019; both measures of inflation are expected to rise during the remainder of the year as tariffs boost inflation temporarily but might not reach the bottom end of the forecast range; of increasing concern is the collapse of inflation expectations with the yield on Treasury Inflation Protected Securities falling to 1.74% which translates to 1.44% when converted to the CPE inflation measure.

- U.S. long-term interest rates fall or rise more than expected.
  + Risk realized; the yield curve has been inverted since May and the inversion worsened substantially in July and August, even though the FOMC cut the federal funds rate by 25 basis points; the yield on the 10-year Treasury Note is substantially below the lower end of the forecast range.

- U.S. fiscal policy is less expansionary than expected due to political uncertainty and congressional paralysis.
  - Risk not realized, partial government shutdown had a small transitory negative impact on Q1, which was made up in Q2; according to CBO’s updated projections, government spending will be somewhat lower in fiscal 2019 than originally expected; however, Congress passed legislation in late July that lifts spending caps and will result in greater spending in fiscal 2020 than previously expected.
- **State and local investment spending** increases less than expected; this would be indicative of slower than expected growth or recession and falling tax revenues.
  - Risk not realized, spending increased more than expected in the first half of 2019 and is on track to exceed the top end of the forecast range; tax revenues strengthened in April as estimated income tax payments surged; revenue growth eased in May, June and July, but remained positive

- **Federal budget deficit** increases more than expected.
  - Risk not realized, tariff revenues, reduced disaster recovery expenses, lower foreign military spending and higher tax revenues have reduced the size of the projected deficit
4. **Global Risks** – stated in the negative relative to the forecast; “+” risk realized; “-“ risk not realized

- **Rising pessimism**
  - 30% of business leaders expect global growth to slow in 2019 a six-fold increase from 2018
  - January and February global data supported this expectation; however growth stabilized in March; nonetheless, 2019 global growth forecasts have been reduced modestly; March data improved slightly and hopes were high that Chinese stimulus would reverse slowing global growth; however, Chinese stimulus at best has been modest
  - The escalation in the U.S.-China trade war is a negative development
  - Global economic activity continued to slow during Q2 and early Q3; GS’s CAI for many countries fell below potential; growth in the volume of global trade fell to zero in May

- **Global risks to monitor in 2019** *(Note: a majority of the global risks listed below are in the process of being realized)*
  - **U.S.-China trade war** – will it be resolved amicably? Negotiations failed in early May, but Presidents Trump and Xi agreed in late June to resume talks; however, talks quickly failed and the trade war escalated in July
  - **Brexit** – will exit occur without a deal or the exit date be delayed? Exit date was delayed to October 31st; in the meantime, uncertainty over the outcome is contributing to a substantial deceleration in the U.K. economy which contracted in Q2; it is likely that Boris Johnson, known as a “hard Brexiter,” who succeeded Theresa May as Prime Minister, will try to leave the EU with “No Deal;” however, a variation on May’s deal with the EU may be approved by Parliament, but with an extended transition date to avoid the consequences of a quick closing of the North Ireland border; commentary about a U.K. constitutional crisis has mushroomed, if Prime Minister Johnson attempts to use his powers to force a “No Deal” Brexit in opposition to sentiment in Parliament
  - **Japan’s consumption tax increase** – will implementation be delayed or offset with fiscal stimulus? Economic activity is deteriorating and the probability of imminent recession is growing; the consumption tax, if implemented in October as scheduled, would add to downside pressures
Will oil shocks occur? – six-month waivers on Iran oil exports expired in May; while the price of oil rose in early 2019, strong U.S. and Saudi production offset shortfalls in production from Iran and Venezuela and has kept a lid on prices; slowing global growth has contributed to lower oil prices by depressing demand; a military confrontation between the U.S. and Iran over the downing of a U.S. drone was averted, but the risk of a U.S.-Iran military confrontation remains.

Political turmoil – India’s parliamentary elections (May), European parliament elections (May), U.S. government shutdown potential – the U.S. government shutdown was resolved in January; India elections resulted in Prime Minister Modi’s party gaining a solid majority in parliament; EU parliamentary elections, as expected, benefited parties on the right and left at the expense of those in the political center, but not to an extent sufficient to alter the existing balance of power.

Financial shocks that morph into political shocks – Italy tops the list, but U.S.-China trade war is also a candidate – the U.S. – China trade war has escalated and odds for a negotiated settlement appear to be low; this will boost inflation somewhat in the U.S. in coming months and slow investment activity; U.S. financial markets expect the Fed to reduce interest rates further to offset negative trade impacts on economic growth; emerging nations will be adversely impacted; it is unclear how China will be affected, but it is clearly a downside risk; in Europe a potential confrontation between Italy’s government and the EC and a potential European banking crisis bear close watching as economic activity in the euro area continues to slow and the odds of recession rise.

Inability of monetary policy to respond to recession, particularly in Europe and Japan – growth in both the EU and Japan is slowing more than expected and Japan appears to be on the cusp of has been ineffective in both regions in lifting growth and inflation.

Chinese policy intervention has limited impact in reversing decelerating growth with knock on adverse impacts on global growth. Data indicate that policy stimulus has had some benefit in slowing deceleration in Chinese growth; however, it’s too soon to determine whether policy intervention will be successful; the renewal and escalation of U.S.-China tariffs on trade is a downside risk; Q2 growth slowed to the lower end of the forecast range; significant Chinese stimulus is increasingly unlikely; policy makers appear to
understand that slower growth is a byproduct of the transition to a more consumer-driven economy and is a necessary outcome to assure economic and social stability in the long run

- **Global GDP growth** slows more than expected.
  + Risk realized: the managing director of the IMF, Christine Lagarde, warned that the global economy “is growing more slowly than we had anticipated” and cited trade tensions, financial tightening, Brexit uncertainty, and slowing growth in China; “When there are too many clouds it takes just one lightening bolt to start the storm”

- **Global trade** declines as the U.S. and other countries pursue protectionist policies.
  + Risk realized: trade growth is decelerating in the U.S. and globally and this is depressing overall economic growth; however, trade protectionism has largely been confined to U.S. initiatives and direct foreign responses to those initiatives.

- **European growth** slows more than expected.
  + B of A expects growth to slow to 1.2% or less; GS expects growth to slow to 1.0%
  + Italy’s GDP declined in both Q3 and Q4 2018, qualifying for a technical recession, but growth rebounded in Q1; industrial production declined 5.4% during 2018; more recent data indicate stagnate economic activity; June’s negative CAI implies that recession may have resumed during Q2
  ✓ Europe’s export-heavy economy is especially susceptible to slowing global growth and trade restrictions; recent underperformance of Germany’s economy, which appears headed for recession or may already be in recession, is indicative of this risk
  + ECB eased monetary policy modestly in early March and expanded liquidity access for banks in June, but with negative interest rates, there’s little it can effectively do to stimulate economic activity; indicative of these risks, bank stock prices continue to plumb new lows; further monetary easing is expected during the summer in an attempt to head off recession in the euro area; substantial additional easing is expected to occur in September
  ✓ The European economy would be adversely impacted if the U.S. imposes tariffs on cars and automobile parts; this risk is uncertain and might have diminished due to the U.S. focus on tariffs on
Chinese imports; a decision has been delayed until late 2019, but could be a real possibility unless Europeans get serious about negotiating with the U.S.; in addition to automobile parts, European protection of its agricultural markets is a significant issue

- **Europe** financial conditions tighten more than expected, financial market volatility escalates and the ECB’s monetary policy is relatively ineffectual.
  + Risk appears to be in the process of being realized; along with other global financial markets, financial conditions eased slightly in January and February, but volatility increased in May in sympathy with renewed volatility in U.S. financial markets but financial conditions tightened to a greater extent in Europe than in the U.S.; following the U.S. lead, financial conditions eased again in June and July, but matters have deteriorated in August
  + End of ECB balance sheet expansion comes at a time when growth is decelerating; markets expect the ECB will resume asset purchases and may lower interest rates more deeply into negative territory at its September policy meeting
  - ECB eased bank liquidity risks by extending the maturity date of the policy of providing long-term liquidity lending to banks and by liberalizing the financial terms of liquidity loans
  + Negative interest rates continue to depress bank profits and are contributing to declining business lending and slowing economic activity; the ECB has little in the way of policy tools to combat slowing growth and declining inflation; negative interest rates are eroding the financial ability of insurance companies and pension funds to meet beneficiary obligations – the consequences are not yet severe, but are accumulating steadily

- **Europe** political instability and social unrest rises more than expected threatening survival of the Eurozone and the European Union.
  + May elections for the European Parliament could exacerbate growing political fragmentation in the EU – although parties on the left and right won seats in the May elections at the expense of centrist parties, for now the status quo remains intact
  + Slowing economic growth will contribute to deepening political discord – this is a risk with a long fuse, but the developing EU recession could accelerate the timing when this risk becomes consequential
Dislike for EC Brussels technocrats and economic recession could create a politically unstable climate in Italy that leads to a euro crisis and poses existential risk to the EU – risk has not been realized, but it hasn’t gone away either

Political instability in Italy increased in August after the right-wing League asked for a general election, which in effect would end its governing coalition with the anti-establishment Five Star Movement; Italy’s prime minister resigned on August 20th formalizing a government crisis; there is a possibility that parties other than the League will be able to form a new government and there is incentive for that to occur because polls indicate that the League would benefit handsomely in a new election at the expense of other parties; if a new government cannot be formed, an election would probably be scheduled for October at about the same time as Italy will be pressuring the European Commission to endorse a deficit budget which is not compliant with EU rules, perhaps triggering a broader EU political crisis

**UK** political instability escalates leading to new parliamentary elections and worse than expected economic performance.

- Risk not realized; but the political status quo is in turmoil; Prime Minister May failed repeatedly to get parliament to agree to an exit plan from the EU; Boris Johnson, a Brexit hardliner, replace May as head the Conservative Party, and automatically became Prime Minister on July 23rd; Brexit deadline extended to October 31st; political fragmentation in the U.K. is an increasing threat and appears to be weighing negatively on economic activity; a no deal stance on the part of Johnson may lead to a no confidence vote in Parliament and new elections

+ Brexit party won a plurality of votes in the UK elections for the EU parliament, which could lead to repercussions in the increasingly fragile internal UK political arena

**China**’s growth slows more than expected.

- China’s year over year growth slowed to 6.2% in Q2, but this was above China’s policy target of achieving growth in 2019 of at least 6.0%; forecasters generally expect that this objective will be met; however, the trade war and slowing global growth have increased this risk
Analysts had expected growth to strengthen in the second half of 2019 as policy intervention gained traction, which assumed policies would be effective, which is not a certainty; however, the trade war with the U.S. appears to be having an adverse impact – growth in both imports and exports has turned negative.

- **China’s trade war with the U.S.** worsens and adversely impacts global growth.
  - **Risk realized:** no agreement was reached and both countries increased tariffs and extended them to a larger basket of goods; Presidents Trump and Xi agreed to resume negotiations, which quickly failed, resulting in additional tariffs and retaliatory measures.
  - Chinese stock markets rose sharply in the first quarter, reflecting improved access to credit, optimism about a trade deal with the U.S., and expectations for reacceleration in growth and rose 31% by April 17th (Shanghai Composite Index); however, when the trade negotiations with the U.S. stalled and then collapsed, the stock market declined 13% by May 9th, although gains are still a positive for the year.

- **China’s and U.S. global leadership confrontation** cold-war sparring could adversely affect global growth.
  - **Risk realized:** China’s growth is slowing and this is adversely impacting many Asian countries and also Germany’s export dependent economy; forecast if global growth have been reduced.
  - Policy aims to reduce dependence on the U.S. dollar by broadening acceptance of the renminbi as a global transactions and settlement currency.
  - China and the U.S. are engaged in a race to dominate technology development; China is overly dependent on the U.S. dominated semi-conductor market and will seek to build its own independent capability.

- **Japan’s** economic growth slows more than expected.
  - **Risk realized:** several negative factors bear watching: trade war and China’s growth slowdown are depressing corporate earnings, financial conditions are tight; growth has slowed sharply and recession risk has risen and may already be underway; if the consumption tax is raised in October, this would exacerbate matters.
**Emerging economies** a strong dollar leads to serious difficulties especially for countries with large amounts of dollar-denominated debt.
- **Venezuela’s political crisis continues to deepen and declining oil production could negatively impact global oil prices; risk not realized because weakening global growth has reduced oil demand more than the hit to supply caused by Venezuelan sanctions**
+ Turkey’s economy contracted in 2018 Q3 and Q4, a rule of thumb for recession; the threat of political turmoil is rising but is unlikely to have much of a global impact
+ GDP growth in emerging economies is below potential and is gradually decelerating; U.S. trade policies will have both short-term and long-term negative effects; in the short-term growth will slow as trade is depressed by tariffs; in the long-term growth could be impacted significantly and adversely if corporations invest in relocating supply chains to domestic sites
✓ India moved in August to end Kashmir’s autonomy, which will heighten tensions with Pakistan
✓ Argentina’s financial markets crashed in early August; to date there has been no visible global consequences

- **Severe and, of course, unexpected natural disasters** occur, which negatively impact global growth.
  - **Risk not realized**

**Global trade war** threatens global economic growth
+ **U.S. – China negotiations failed in May and both countries increased tariffs; talks resumed in late June and delayed imposition of additional tariffs; however, talks quickly failed and both countries escalated retaliatory policies**
- **The possibility that the U.S. might impose tariffs on imports of autos and auto parts, which would impact Europe, Japan and Korea in particular, remains – the Trump Administration has delayed a decision until late 2019; however, the U.S. is preparing to impose tariffs on other European imports and, if this occurs, the European Union is likely to retaliate in kind**
+ **President Trump’s short-lived threat to impose tariffs on goods imported from Mexico was withdrawn, but could resurface later, particularly if Trump judges the threat to be beneficial to his re-election chances; this non-event, however, increased uncertainty**
It is becoming clearer as time passes that uncertainty is as much of a negative factor on global growth as the imposition of actual tariffs

- **New Risks**
  - Following collapse of U.S.-North Korea denuclearization summit with U.S. President Trump, North Korea has resumed intercontinental ballistic missile testing, which have duly been reported, but little attention has been paid to this intentional sabre rattling
  - Potential for conflict with Iran which could disrupt global oil supplies; for a moment in time following the downing of a U.S. drone it appeared that this risk would be realized, but the threat was averted by President Trump’s decision not to retaliate; however Iran’s decision to continue development of nuclear weapons, the U.S. tightening of economic sanctions, and Iran’s seizure of oil tankers in the Persian Gulf, assures that tensions will remain high and could lead to military action
  - Pro-democracy demonstrations in Hong Kong could lead to China’s intervention; if this occurred, it would probably trigger a series of events that could severely impact global growth; because the consequences of intervention would be severe for China as well as the rest of the world, the probability of intervention is low, but the situation bears watching