



The Longbrake Letter*
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February, 2018

I. Introduction

Optimism abounds across the globe and world economies are finally benefiting from years of easy monetary policy. Momentum is incredibly powerful and is currently self-reinforcing. Practically all economies are growing above potential and slack has already disappeared or is disappearing rapidly.

In the case of the U.S., there is no slack and the enormous fiscal stimulus embedded in the “Tax Cuts and Jobs Act,” disaster relief spending, and substantial increases in defense and discretionary spending caps will lift growth substantially above potential in both 2018 and 2019. When an economy has no slack and operates well above its potential, it risks overheating and that triggers upward pressures on prices and accelerates the buildup of imbalances in the economy. We are in the mature phase of the business cycle and the added stimulus will propel the economy higher in coming months.

Best to enjoy the good times now because we know from history that strong economic momentum, when the economy is operating at or above full capacity, eventually leads to recession and correction of the imbalances that built up during the euphoric period of strong growth.

I am a member of the Conference of Business Economists (CBE). We meet three times a year in Washington, D.C. and share with each other developments in our respective industries, which cover collectively the major sectors of the U.S. economy. Our two days of meetings occurred during the worst moments of the recent stock market meltdown. Stock market volatility has little impact, at least in the short run, on economic activity. Thus, members weren’t overly concerned. We discussed five topical areas—labor market dynamics, the impact of fiscal policy changes, aggregate demand dynamics, aggregate supply dynamics, and perspectives on monetary policy. As we exchanged information, several themes emerged. CBE abides by the Chatham House Rule, which means that what we learn during meetings can be shared generally but without specific attribution to individuals or their companies.

Disruption emerged as the dominant theme. It consists of two components—policy disruption and business structure disruption. With the backdrop of a U.S. economy operating above full employment and

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at full capacity, massive fiscal stimulus through tax reform, tax cuts, and spending increases not only poses risk of overheating the economy, but also, by changing tax penalties and benefits, ushers in a period of significant adjustment in how businesses operate and what kinds of decisions they will make. Monetary policy is also likely to be disruptive as the Federal Reserve reverses its years-long policy of low interest rates and abundant liquidity.

When the rules of the game are stable and are expected to continue, behaviors adapt to take maximum advantage of those rules. In the case of monetary policy, low interest rates and abundant liquidity combined to put market volatility to sleep and encouraged speculation in asset prices and the use of cheap debt to leverage returns. When the rules of the game change, strategies which relied on the old rules can suddenly blow up. Indeed, the sleeping bear of volatility woke abruptly from its hibernation in early February. Market participants suddenly realized that cheap leverage was coming to an end as the Federal Reserve raised interest rates and the yield curve flattened. Inverse volatility products, which relied on low interest rates and low volatility, were suddenly caught in a vicious short squeeze, which roiled the markets for a few days. What we don't yet really know is what other financial markets strategies will collapse as the Federal Reserve continues to normalize monetary policy. The point, however, is that disruption has occurred, and as we move from one regime to another, the excesses of the old regime will be unwound with unpredictable consequences.

With the exception of retailing and ecommerce, business structure disruption receives less focus in the media, but technology innovations are disrupting how businesses operate and are creating winners and losers. An example involves how social media and new start-up companies, such as Airbnb, are transforming the hotel and hospitality industry. During 2017 hotel occupancy rates rose to the highest level to date in the current economic expansion. However, the average room rate declined. This has never happened before. Historically, higher occupancy rates are positively correlated with higher room prices. The inverse relationship in 2017 may not be an anomaly but the result of increased competition from nontraditional sources of lodging. Similar phenomena have been documented in ridesharing and taxi transportation. The point made by several participants is that technology disruption of business structures is increasing rapidly in scope and impact.

Of course, the impact of Amazon, Netflix, and other online retailers on legacy big box stores and shopping centers is well documented. But the trend is still in the rapid growth phase and the full extent of the consequences for legacy retailing establishments and retailing real estate investment is yet to be fully felt. And, to the extent that people still like the social experience of shopping in a store, Amazon's new "Go Store," has absolutely no physical employees but enables a shopper to choose merchandise on a self-serve basis and charges the shopper for the cost of the items selected when he or she exits the store. This shopping experience has been enabled by smart phones and apps that interface with Amazon's technology. Not only does the "Go Store" eliminate labor, it increases the efficiency of inventory control and accumulates prodigious amounts of data on shopping habits and preferences which can expedite production, which is also a benefit of online shopping.

On the drawing boards is potentially dramatic and far-reaching restructuring of health care. This includes the digitization of traditional activities, such as scheduling appointments and maintenance of medical records. But it extends to the use of artificial intelligence to aid diagnosis. Personal technological devices, such as Fitbit, hold out promise for prompting individuals to lead healthier lives and remind them to take prescribed drugs on time. And then, there is the likelihood over the next few years that health information from personal devices, doctors' records and insurance claims will be integrated and combined with artificial intelligence protocols to assist in medical research and improve efficiencies in terms both of timeliness and quality of diagnosis and prescribed treatments.

What is less well understood is that the quality of economic data has been negatively impacted by

technology innovations. For example, political polling historically has relied on drawing samples based on land telephone lines and those samples could be controlled quite effectively for demographic characteristics, geography, and political voting patterns. Polling reliability has broken down with the advent of the cell phones, which detach a person from a geographical location and limit or prohibit marketing calls. In addition, land line subscribers can opt to block marketing calls. Pollsters have yet to find ways to overcome these structural changes and, as a consequence, polling has become more less predictive of outcomes.

Another example involves the quality of employment data. An increasing percentage of the workforce falls into the category of independent work, which is poorly measured by the Bureau of Labor Statistics (BLS). One study indicates that the percentage of workers participating in the online platform economy has risen from 0.2 percent in 2012 to 0.9 percent in 2017. While this is not yet a significant percentage, it is the trend that matters. BLS does measure the share of workers in alternative work arrangements (independent contractors) and this percentage has grown from 6 percent in 1995 to 9 percent in 2015. BLS reports that a growing number of survey respondents with administrative self-employment earnings records does not report being self-employed in surveys. These trends skew traditional BLS labor market metrics and may explain, in part, why the labor market may not be as tight as the traditional unemployment rate implies and why increases in wage growth rates have not been greater as historical patterns indicate should be happening.

And, speaking of measurement challenges, technology may be impacting inflation measurement. The bias, if it exists, would be that inflation is actually lower than reported. If this is so, it might also help explain the slow response of wage growth to a tightening labor market. The argument for lower inflation spawned by technology rests on how technology facilitates price discovery, which then fosters increased competition and efficiency. Technology has already transformed business models in retailing, lodging, transportation, and finance and is coming soon to health care.

II. Outlook for 2018—Snapshot

In the Appendix are forecasts for a variety of economic variables covering 2018 for both the U.S. and global economies. However, it goes without saying that there is always a nontrivial possibility that the forecasts will not be fulfilled by actual events. The U.S. and global economies are dynamic and complex. Policy initiatives, specific natural and manmade events, and interactive feedbacks can fundamentally alter the course of economic and political activity.

Forecasts start with economic and political conditions in the world as we believe we understand them at a particular point in time. Then, the evolution of these conditions, as well as anticipated policy initiatives and political events, with the aid of econometric models, past experience, and judgment, are woven together to develop forecasts of individual economic variables.

We are reminded how difficult peering ahead is when we look back at the accuracy of the previous year's forecasts. For example, in 2017 just about everyone was surprised that U.S. inflation fell rather than rising as expected. Forecasters were also surprised by the weakness of the dollar. And, while analysts expected tax reform to be enacted in the U.S. the anticipated timing was approximately six months too soon and additional spending increases were not fully anticipated. These developments, particularly tax cuts and spending increases, will have significant impacts during 2018 and beyond. We can speculate on what the consequences might be, but we don't know details yet, which could matter materially. And, we have only a rudimentary understanding of the kinds of feedbacks that will be set in motion and even less understanding of how policy implementation and feedbacks will combine to produce economic and political outcomes.

1. U.S.

As 2018 unfolds, we know certain strengths and vulnerabilities of the U.S. and global economies and political systems. In the U.S. we know that the economy is at or above full employment and that the output gap has vanished. We know Trump's election more than a year ago unleashed a wave of consumer, business and investor optimism, which has been reinforced by the enactment of the "Tax Cuts and Jobs Act" just prior to Christmas and additionally by substantial increases in spending caps. Indeed, investors were giddy at the start of the year—stock prices soared over 7 percent in the month of January. But, the euphoria didn't last long as investors began to rethink the potential consequences of massive fiscal stimulus applied to an economy already at full capacity. Interest rates rose as investors worried about the prospect of higher inflation and tighter monetary policy. Stock prices plummeted in early February and then stabilized. Year-to-date stock prices are still up 2 percent, but volatility has returned with a vengeance.

We know that the **FOMC** is likely to raise the federal funds rate several times during 2018. There is a possibility that the Trump Administration will pursue trade policies intended to keep more production on shore and attempt to reduce the size of the U.S. trade deficit. We know immigration policy will continue to be very contentious and that the flow of immigrants into the United States will continue to slow. We know that congressional elections will be held in November, but we do not know whether the Republicans will retain control or the Democrats will win at least one of the houses of Congress.

Even though we know a lot about where we are and where we might be going, there is a high degree of uncertainty about how matters will play out during 2018 and whether the consequences of actions and feedbacks will be favorable or unfavorable on balance.

2. Europe

We also know much about global economies and political systems. We know that Germany cobbled together a weak governing coalition and that the U.K.'s Conservative Party is governing without a majority. We know that Italy will hold national elections in March 2018. We know that Euroskeptic political movements have gained ground, but their impacts on policy have been minor to date, perhaps because economic conditions have improved considerably. We know that fundamental governance flaws remain which threaten the existence of the European union in its current form. We don't know whether a new crisis will erupt in 2018 or whether the slow, tortuous process of disintegration will continue. We know that economic activity accelerated in the European Union in 2017 and will continue to improve during 2018. But, we are not sure whether this is transitory due to European Central Bank easy monetary policy and an upwelling of optimism or whether it is fundamental and sustainable. We know that the UK initiated the two-year process to exit the European Union (EU) in March 2017. We do not know what the exact terms are likely to be, nor do we fully understand the potential longer run consequences of exit for the UK and EU.

3. Japan

We know that Japan starts 2018 with strong economic momentum, low unemployment, accelerating inflation, an accommodative monetary policy and strong business profitability. But we also know that Japan's fundamental challenges of an aging population and negative population growth, a closed society, and an extraordinarily high public-debt-to-GDP ratio remain as intractable as ever.

4. China

There is a broadly shared consensus that China will experience a moderate, well managed slowdown during 2018 because the rate of growth in credit and real estate construction and investment will slow a little. Policy will be focused on improving financial regulation to limit complex products and financial arbitraging without triggering market volatility or adversely affecting the supply of credit supporting fundamental economic activity.

We know that political and economic stability is likely to persist in China during 2018. But we also know that the Chinese economy cannot maintain high growth rates indefinitely, given its reluctance to embrace market-based reforms and the aging of its population. We know that a principal driver of China's high rate of growth, namely housing investment, is maturing and eventually must slow as urban migration slows and population growth stalls. We know that corporate debt has risen to excessive levels and is concentrated in state owned enterprises, but we believe the Chinese government will be successful in papering over bad debt problems. We know that President Xi has centralized political power with the assistance of his anticorruption leadership purges. And, we know that President Xi has made achieving a "Better Life" the paramount policy goal in lieu of the past singular focus on maximizing economic growth. We also know that China increasingly has embraced an assertive foreign policy in Asia and beyond. What we do not know is how the changes occurring in China will affect Chinese growth and, by extension, how those changes will influence global economies.

When it comes to assessing risks, the question to ponder is what could go wrong with the sanguine outlook for 2018. The foremost risk is that increased financial regulation, which is a paramount policy goal of President Xi, might not end up being as benign as expected and could trigger unintended problems, which could lead to a greater than anticipated slowdown in credit growth which would adversely impact economic activity.

A second risk is overly aggressive environmental regulation as part of the "Better Life" policy goal, which could interrupt certain kinds of business activities and slow overall economic growth. This could materialize because President Xi's anti-corruption campaign has raised noncompliance penalties for local officials, and this could become a significant risk given the campaign-style enforcement of general environmental goals in lieu of specifically defined standards and timelines. Those who live in Beijing have been pleasantly surprised at the sudden disappearance of smog; however, pollution has worsened in other parts of China, which implies that heavy industry production has merely been relocated to other parts of China.

A third risk involves trade with the U.S. To date this risk has not surfaced in any kind of meaningful way. In late 2017, the U.S. imposed steep tariffs on washing machines and solar panels, which were specifically aimed at China. These tariffs amount mostly as a symbolic gesture as the volume of trade in these two products is negligible. The risk is that trade between the U.S. and China could contract on a much broader basis. To put this into perspective, Chinese exports to the U.S. amount to approximately 3 percent of Chinese GDP, which means that a contraction in trade of, say 10 percent, would reduce China's GDP growth rate in the year the contraction occurred by 0.3 to 0.5 percent, including multiplier effects.

On the positive side of risks, tighter government regulation of supply by reducing excess capacity could boost commodity prices and that would result in higher profits. However, while this would be positive for Chinese businesses and for commodity-exporting countries, it would have inflationary consequences for commodity-importing countries. Another upside risk is that construction and real estate investment could be stronger than currently expected.

5. Emerging Markets

Emerging markets enter 2018 with positive economic momentum because of strengthening economies in the U.S., Europe and Japan. But a more restrictive monetary policy in the U.S. could lead to a shortage of liquidity and a dollar squeeze.

Overall growth in emerging market countries is rebounding but has not yet reached the level that prevailed from 2003 to 2007. Industrial production has picked up and exports are growing due to price increases. Investment remains weak, but should pick up as slack diminishes. Interestingly, as the rise in commodity prices has accelerated, overall inflation rates have been subdued. With some notable exceptions (Brazil, Argentina, and Venezuela) vulnerability of emerging markets countries' fiscal positions to rising interest rates generally has improved.

III. Risks to the Outlook

2018 is off to a very strong start, notwithstanding the recent return of stock market volatility and rising interest rates.

- Consumer and business optimism is at 20-year highs.
- January's payroll employment increased 200,000, above the average of 176,167 over the past 12 months and well above the 116,417 average monthly increase in the those eligible to work over the past 12 months.
- Reduced tax withholding schedules for individual income taxes commence in February in response to cuts in individual income tax rates in the "Tax Cuts and Jobs Act."

So, why does all this good news seem like a disconnect from reality? Some of us with a lot of gray hair remember Alan Greenspan's comment about "irrational exuberance." When did he make this statement? It was in December 1996. But markets shrugged and the economy continued to power ahead for another four years and the stock market boomed.

What is the moral of this historical experience? Momentum and optimism can carry the economy and market for a lot longer and a lot higher than you think is possible. But, history also tells us that the longer euphoria prevails, the greater economic and financial imbalances become, and the harder and more painful the ultimate and inevitable correction will be when it finally arrives.

There are already early warning signals of building and eventually unsustainable imbalances. Three serve to illustrate the point.

First, the Congressional Budget Office (CBO) says there is full employment when the unemployment rate falls to 4.77 percent. The reported unemployment rate is well below that level and has come in at 4.1 percent for four consecutive months. Moreover, forecasters expect the unemployment rate to fall further over the next two years to as low as 3.5 percent.

Second, 2017 fourth quarter reported real GDP exactly equaled CBO's estimate of potential real GDP. If CBO's numbers can be trusted, that means that the economy is operating at its full capacity. But there is a problem going forward. CBO believes potential real GDP growth will be 1.66 percent in 2018 and 1.76 percent in 2019. Other forecasters peg the potential rate of growth between 1.5 and 2.0 percent. But,

given the current robust economic momentum and enormous fiscal stimulus from tax cuts and spending increases, forecasters expect real GDP to increase in a range of 2.5 to 3.0 percent in 2018. Moreover, substantial above potential growth is also forecast for 2019. Based upon CBO's estimates of potential real GDP, the economy is heading deep into overheated territory with an over capacity gap in excess of 1 percent by the end of 2018 and approximately 2 percent by the end of 2019. The last time the economy operated above full capacity was at the end of the dot com boom in 1999 and 2000 when CBO estimated that economic output was 2 to 3 percent above full capacity. Prior to that, one has to go back to 1972 and 1973 to find a similar extended period of excess output, which was 2 to 4 percent above full capacity at that time. In both of these cases of excess output, recession followed within one to two years after excess output reached 2 percent. If we repeat this historical pattern in the current cycle, it would place timing of recession in 2020 or 2021. However, it should be noted that other recessions have begun at much lower levels of excess output.

Third, consumer spending is growing faster than disposable income which has been facilitated by even faster growth in consumer debt and a substantial decline in the saving rate. Based on the most current data, which will be revised in coming months, aggregate disposable income rose 3.5 percent; consumer spending rose 4.6 percent, and consumer credit (not including mortgages) rose 5.3 percent in 2017. The saving rate fell from 4.9 percent in 2016 to 4.0 percent in 2017 and was 2.4 percent in the month of December. In the long run, stability requires these three growth rates to be the same and for the saving rate to remain constant. What this means is that growth in consumer spending eventually will have to slow. The alternative is for disposable income to grow faster. Tax cuts will help in 2018. But this will probably be offset by a slowdown in employment growth. It's hard to add a lot of workers to payrolls when the unemployment rate is as low as it is currently. Increases in wage rates could help, but if higher wage rates merely reflect increasing inflation, that won't offset the mismatch between income and spending growth. Perhaps more worrisome is historical patterns that overshoots in spending growth are followed by undershoots as consumers repair their household finances by paying down debt and increasing savings.

In my judgment we are well within the mature part of the economic cycle. Momentum is strong and federal tax cuts and spending increases will probably extend the length of the cycle and amplify the peak. But a correction or probably recession is not far off—one to three years. With this in mind, I summarize 16 risks in the remainder of this section. Not all the risks are of equal magnitude, nor will they necessarily be realized on the same time line.

1. Inflation

We have gotten used to the Fed reminding us continually that achievement of its 2 percent inflation target is just around the corner, but we never get there. Inflation, as measured by the personal consumption expenditures (PCE) index, has averaged 1.42 percent over the last ten years. Based upon repeated false alarms, many are skeptical that the Fed can engineer a 2.0 inflation rate on a sustained basis. This includes the market for Treasury Inflation Protected securities. The five-year, five-year forward inflation expectation rate has averaged 2.15 percent over the last 5 years, which when adjusted to the PCE inflation index from the CPI index equals approximately 1.90 percent. But the Fed once again voiced confidence at the January Federal Open Market Committee (FOMC) that the 2 percent inflation target will be reached by the end of 2018. Many are skeptical. But, what if inflation really finally takes off? Certainly, that is a real possibility given that the labor market is very tight, given that, thanks to fiscal stimulus, the economy is likely to overheat, given that global economic activity is booming, given that commodity prices are rising, and given that the dollar is weakening. Inflation expectations could flip from disbelief to agitated anxiety that runaway inflation is just around the corner.

Why is a change in inflation expectations a risk? It is a risk because expectations drive behaviors

and a change in expectations would cause businesses and individuals to accelerate decisions to beat higher inflation before it occurs. But, this would have a self-fulfilling impact by raising demand without changing supply. The recent rise in the five-year, five-year forward inflation expectation rate from an average of from 2.01 percent in 2017 to 2.22 percent on February 15, although modest, could indicate wavering confidence that inflation will remain contained.

2. Monetary Policy—Interest Rates

In December the median estimate of FOMC members was three increases in the federal funds rate during 2018 from a range of 1.25–1.50 percent to 2.00–2.25 percent. Some FOMC members and several analysts expect four rate increases during 2018. Strong economic growth, well above potential, a frothy stock market and a whiff of accelerating inflation could galvanize the Powell Fed to tighten monetary policy more aggressively than indicated in the December Summary of Economic Projections to keep the inflation bad genie bottled up. If that occurs, we know the story. The bond market gets crushed first. This is already happening. The stock market gets clobbered, too, but usually not quite so quickly. The recent abrupt stock market correction appears linked more to a short squeeze prompted by overleverage of inverse volatility products and, to the extent that is the case, a real bear market has probably not started yet. In any event, the risk is that the FOMC will overreact and in so doing accelerate timing of the onset of recession.

3. Monetary Policy—Liquidity

Quantitative easing provided prodigious amounts of liquidity, much of which ended up supporting excessive asset price inflation. The Fed slowed its provision of liquidity when it tapered large scale asset purchases and now is withdrawing liquidity by not replacing maturing principal and also by raising interest rates. This is occurring at a time when the U.S. Treasury is ramping up borrowing, forced by tax cuts and spending increases.

The unfolding liquidity squeeze will be concentrated at the short end of the yield curve. The Fed has tied up long-term duration Treasury securities and mortgage-backed securities in its portfolio. There is a shortage of such securities in the market and this keeps downward pressure on long-term yields. This might seem a bit odd since long-term Treasury yields have risen recently. But that increase is due to increased market worries about robust economic growth and higher inflation. The fact remains that the term premium on long-term Treasury securities is still negative, which is depressing yields. This is not a phenomenon that would occur, at least not to the same extent, if the Fed had not locked up a substantial portion of long-term securities in its portfolio.

Compounding liquidity risks, Treasury has announced that most new issuance will be short maturities. Because the Fed is raising rates, it is not buying securities, which means that the entire net Treasury issuance plus maturing principal that the Fed is not replacing will have to be absorbed by private investors. The obvious consequence will be substantial upward pressure on short-term rates and a flattening yield curve and possibly an inverted yield curve later in the year. When the yield curve is flat there is no money to be made in carry trades or arbitraging. Historically, a flat or inverted yield curve has been a bad development for stock prices. A true bear market in stocks, as opposed to the recent correction, will weigh negatively on confidence.

4. Credit Risk

Credit risk spreads have been very tight for some time, prompted by investors search for yield. One of the reasons that the recent stock market correction is probably not yet the start of a bear market is that credit spreads have remained very tight. Stock market trauma that is triggered by worries about sustainability of economic growth is always accompanied by widening credit spreads.

Nonetheless, credit risk is underpriced. Low credit spreads encourage leveraging to eke out more yield. In addition, abundant liquidity and optimism typically fosters competitive erosion of underwriting standards. This is a typical end-of-cycle phenomenon. Anecdotal reports suggest that this process is underway for commercial and industrial loans and even for commercial real estate loans, although the Federal Reserve's senior loan officer survey indicates that lenders are tightening commercial real estate underwriting standards.

Provisions of the "Tax Cuts and Jobs Act" have added a new element of risk by limiting the deductibility of interest by individuals on residential mortgage loans and limiting the deductibility of interest on corporate debt. The consequences of these changes in federal tax law will be negative, but the magnitude of this risk is uncertain.

5. Global Liquidity

Rising commodity prices, particularly oil, ties up liquidity in working capital. This starves other activities of credit when central banks withdraw monetary accommodation. This risk is greatest for emerging market economies with dollar denominated debt.

6. Dollar Bear Market

Many think the value of the dollar should rise when U.S. interest rates are rising faster than rates in other countries. The simple logic is that higher U.S. interest rates should attract foreign inflows of capital, thus increasing the demand for dollars and this would result in boosting the dollar's value. For those who accept this simple logic, recent dollar weakness has to be puzzling. A close look at historical patterns doesn't substantiate the validity of this simple-logic belief. Dollar bear markets are set in motion when the U.S. federal budget deficit is rising. Thanks to tax cuts and spending increases, the U.S. federal debt to nominal GDP ratio is set to explode over the next several years. My econometric model indicates that a 1 percentage point sustained increase in the annual budget deficit will reduce the trade-weighted value of the dollar by nearly 7 percent.

Why do higher federal budget deficits depress the value of the dollar? The answer appears to be simple and straightforward. Higher budget deficits are indicia of deteriorating fiscal soundness. The value of the dollar declines to compensate investors for the increased risk. Obviously, many other factors affect the value of the dollar, but the negative effect of higher budget deficits is substantial. When understood in this way, recent dollar weakness makes total sense.

In addition, the U.S. trade deficit is headed higher, perhaps much higher. Historically the budget deficit and the trade deficit tend to be positively correlated—the so-called twin deficits. Why does this matter? A weak U.S. dollar will boost import prices and this will translate into upward pressure on inflation.

7. Federal Budget Deficit

Republicans have thrown caution to the winds. Gone, except for Senator Rand Paul, is concern about the long-term consequences of increased budget deficits and a rising public-debt-to-nominal-GDP ratio. The excuse for budgetary profligacy is embedded in an ideological construct, which is simply not supported by rigorous economic analysis. It is believed that tax cuts will more than pay for themselves by boosting economic growth sufficiently to generate additional tax revenues which more than offset lost revenues from tax cuts. Economists refer to this expected phenomenon as having a multiplier great than one. Study after study, however, indicates that the multiplier is substantially less than one. Credible analysis indicates that the \$1.5 trillion in tax cuts over the next ten years will probably only result in about \$500 billion in additional tax revenues. The net effect, then, would be to increase the accumulated deficit over the next ten years by \$1 trillion. Even this analysis is probably generous because the \$1.5 trillion in tax cuts is not only front-loaded but also assumes that tax cuts will expire for individuals after 2025, which could happen, but will be very difficult politically to engineer. The history of tax breaks is that most are extended when expiration is imminent.

As one economist recently put it, U.S. fiscal policy is just plain “nutty.” The ratio of federal debt held by the public to nominal GDP was just slightly over 35 percent before the Great Recession commenced at the beginning of 2008. By the end of the Great Recession in June 2009, the ratio had climbed to over 49 percent and it kept on rising to 74 percent by the end of 2013. It then stabilized but never fell as it should have during good economic times. The ratio stood at 76 percent at the end of 2017. The debt ratio is set to rise to 92 percent over the next ten years. But, this is most likely an underestimate because it assumes individual tax cuts are not repealed after 2025 and it assumes an economy that does not experience a recession. Even a short and shallow recession would cause the debt ratio to rise well above 100 percent over the next ten years.

And, it is a well-known fact, which policymakers intentionally ignore, that an aging population is on a collision course with social security and Medicare entitlements embedded in current law. The debt ratio is set to explore beyond the next ten years. Increasingly, the finances of the U.S. don’t appear to differ much from those of a banana republic. Thus, it is hardly surprising that the dollar has weakened. Treasury Secretary Mnuchin’s comment recently at Davos that a weak dollar is good for America appears to be uninformed and limited to the transitory benefits of a weaker dollar for U.S. exports.

8. Global Debt and Leverage

Feasting on debt is not just a U.S. problem, it is a global phenomenon. In spite of China’s crackdown on shadow banking products, it continues to rely on debt to finance its rapid growth. China’s problem is that it requires more than a yuan of debt to finance a yuan increase in GDP. And the inefficiency of debt in financing growth is increasing steadily. Over the longer term, increased debt leverage slows real growth. A consequence of rising debt leverage and slower real economic growth is increased fragility of financial markets. However, realization of the consequences of increased debt leverage can be postponed for a very long time by government and central bank intervention, such as through central bank bond buying programs. Japan is a case in point. No one knows for sure how much debt leverage will be too much or when the tipping point will be breached. But, simple logic says that more debt leverage brings a country closer to that tipping point.

9. Stock Market Euphoria

U.S. stock prices have done well for several years for several reasons. First, low interest rates and the Fed's promise to keep interest rates low, boosted price-earnings ratios. Second, an increasing share of economic wealth creation, in the form of higher profit margins, has gone to owners and less to workers. Third, and now corporate tax cuts are amplifying corporate profits. By most traditional measures, stocks are overvalued, but perhaps not to excessive extremes. Until the recent correction, there was increasing risk that a euphoria-driven mania might be emerging which could drive prices to much higher levels. In a mania optimism begets optimism and induces rampant speculation. Following the recent stock market correct, this risk seems less likely, but remains a possibility.

10. Regulation

Ineffective regulation of mortgage markets and securities trading was one of the contributing causes of the Great Financial Crisis of 2007-2009. In the aftermath, Congress enacted the Dodd-Frank Act and regulators were prompted by the sins of the past to double down on protecting the public. The Consumer Financial Protection Bureau was a center piece of new regulatory fervor.

There appears to be a cyclical pattern in regulatory intensity. When economic difficulties emerge, calls for tighter regulation crescendo. Unfortunately, this is equivalent to closing the barn door after the horse has already fled. Correspondingly, when times are good, regulation is seen as a market impediment adding unnecessary rules and costs which inhibit expansion of economic activity.

Once again we are in that phase of the cycle where it is popular to bash regulation and push for lightening rules. The risk is that behaviors, which lead to excessive risk taking and self-serving abuses, will not be held in check, which could contribute to end-of-the-cycle excesses.

What is particularly worrisome currently is that that anti-regulatory crusade is aimed at a broader set of targets beyond simply business activities and financial markets, which include environmental protection and, perhaps soon, consumer protection. Thus, the risk is that deregulation lowers the bounds of prudence and enables excesses which contribute to the next economic downturn. That, in turn, will trigger regulatory overkill after the fact. And, so, the cycle repeats in a procyclical fashion.

11. Trade

A year ago, following President Trump's election, anxieties were high that implementation of the "America First" ideology would clobber global trade. This anxiety was reinforced early in the new Administration when President Trump cancelled America's involvement in the Trans-Pacific Partnership and criticized the North American Free Trade Agreement (NAFTA) and threatened to cancel it, too. As matters have turned out, much of the anti-trade rhetoric was fodder for Trump's political base rather than a precursor of dramatic changes in trade policies. Rather than cancelling NAFTA, negotiations have been ongoing between Mexico, Canada, and the United States to reform NAFTA. These negotiations continue and the risk remains that the ultimate renegotiated terms will be anti-free trade, but that risk has diminished.

In the year since President Trump's election, world trade has emerged from the doldrums and flourished. This has occurred largely in response to the synchronized global economic expansion. The Trump Administration slapped huge tariffs on solar panels and washing machines and is considering increasing tariffs and restricting imports on other commodities, such as steel and aluminum. But these actions are

small potatoes. Some prospective foreign retaliation has emerged. China is considering limiting imports of U.S. sorghum and soy beans and the European Union is investigating limiting imports of Kentucky bourbon and Wisconsin dairy products. But, even if these investigations lead to restrictions, they are purely symbolic and will have little impact on the volume of trade. Thus, this risk has diminished considerably, but as long as anti-trade rhetoric remains a useful political tool in the U.S., this risk will remain.

12. Low Productivity

Productivity is important to how fast the economy can grow. It is also critical to fostering strong growth in real wages and in raising the standard of living. Since 1955, U.S. productivity has averaged an annual increase of 2.0 percent. Since 2005 annual productivity improvement has fallen to 1.25 percent and since the end of the Great Recession in mid-2009, productivity has declined further to a dismal annual average increase of 1.06 percent. Weak capital expenditures have been a significant culprit in the decline, but other causes have been cited. The decline in productivity has been a global phenomenon which suggests that the phenomenon is not unique to U.S. policy but is embedded in changes in demographics, business structure and culture. There has been increasing speculation about causes, but broad consensus has yet to emerge. Other than talk about deregulation and tax-breaks to stimulate investment, without a clear understanding of the causes of the decline in productivity, it is impossible to design policies that would be effective in reversing that trend.

Simple logic implies that advances in technology, which are daily changing how we live, should be boosting productivity. This hasn't showed up in the data, however. Perhaps it will eventually. In the meantime, low productivity has contributed to growing income inequality and, in that context, it is a significant on-going risk. Moreover, as populations age and entitlement spending increases, the absence of robust increases in productivity limit the ability to pay for those entitlements, thus placing ever-increasing pressure on the federal budget deficit.

13. Wealth and Income Inequality

Income and wealth inequality have increased steadily for the past 40 years. The causes are many. In the last few years, the Federal Reserve's quantitative easing monetary policy has contributed to inequality by intentionally driving up asset prices. That policy was designed to pull the U.S. economy out of its deep funk by keeping interest rates very low and providing ample liquidity which drove up assets prices and created prodigious amounts of wealth. While many credit this policy with rejuvenating the U.S. economy, this success came at a potentially enormous cost. The additional wealth creation went primarily to existing asset holders, who are limited to a small proportion of the population, and exacerbated wealth inequality.

Although the "Tax Cuts and Jobs Act" cuts taxes for most all Americans, a larger portion of the benefits will go to wealthy individuals and this will worsen inequality further in the next few years.

What are the consequences of growing inequality? First and foremost, there is growing class separation between the haves and have nots. Epidemics, such as the opioid crisis, have mushroomed as growth in wages of low-income workers has stagnated. A clearer consequence is the ascendancy of populism and increasingly anti-democratic impulses that favor autocratic leadership. Many believe Donald Trump's unexpected election had much to do with the angst growing income inequality has fostered in lower income workers.

Unfortunately, it looks like the inequality gap will continue to grow and this could have negative long-term consequences of unknown severity. The risk inequality poses for our way of life and our democratic

system of governance is significant and appears to be escalating with the passage of time.

14. Culture

Participation of prime-age males in the U.S. labor force has declined in recent years. This trend is limited to the U.S. and does not extend to prime-age women. Coincident with this trend, the incarceration rate of young males has exploded and exceeds levels that exist in all other countries. As is thoroughly documented by Charles Murray in his book, *Coming Apart*, there has been a systematic breakdown in family stability over the past 50 years among the lower income segment of the population. The lower and upper-class divide has grown steadily as the middle-class segment of American society has been hollowed out. Political influence increasingly has come to be dominated by the wealthy elite, notwithstanding the rise of populism. This has favored the Republican Party's control of the presidency and Congress. Political influence has been exercised to craft economic policies which favor the wealthy. Although the "Tax Cuts and Jobs Act" was positioned as helping the average American and rekindling and accelerating economic growth, many of its provisions blatantly provide significant tax benefits to wealthy individuals, particularly those engaged in real estate development and investment.

Culture cannot easily be changed. Culture evolves slowly over a long time. We can attempt to treat the symptoms through various social programs. But, substantive cultural change requires more than new economic and social programs. It is difficult to discern what could be done to begin the healing process for America's broken culture. As matters stand, the deterioration of American culture, coupled with growing income and wealth inequality, pose extremely significant long-term risks to the American way of life and some believe could devolve into class warfare.

15. Immigration

In an era of burgeoning populism and growing income inequality, nativism has become an increasingly powerful political force. Fear of job loss to immigrants was a contributing factor to Britain's vote to leave the European Union. In the U.S., President Trump's call to build a wall to prevent illegal immigration has resonated with many Americans. The issue of immigration in Europe has weakened centrist political parties and imperils the principle of free movement of people across borders within the European Union.

Just as is the case with trade, free movement of people theoretically results in a more efficient allocation of resources and thus lifts economic growth. The problem, however, is that trade and immigration threaten the status quo and can result in lost employment opportunities or lower wages for some. It is natural in the human condition to be more comfortable with those of your own kind—your family, your tribe, those who speak the same language and those who share the same traditions, culture and values. Outsiders threaten one's way of life. So, while immigration can boost economic growth, which benefits society in the aggregate, it creates winners and losers.

When the income divide was not as accentuated as it has become in the U.S. today and productivity and economic growth were strong, the natural resistances to immigration were contained. That has all changed for the worse and, as such, immigration issues will continue to be a political lightning rod in U.S. politics for the foreseeable future.

16. Global Politics

Hot spots around the world always pose the potential to erupt into a massive global crisis. For example, a few months ago, when North Korea was testing atomic and hydrogen bombs and launching intercontinental ballistic missiles and President Trump was twittering “Rocket Man” that his button was bigger, the prospect of nuclear war became more than just an armchair thought exercise. More recently the rhetoric on both sides has cooled, but significant escalation remains a real possibility.

Another hot spot is the Middle East. Saudi Arabia and Iran are engaged in a proxy war in Yemen. Even though ISIS has been defeated, it has gone underground and still has the ability to sow disruption through terrorism. In addition, Syria continues to boil with Russian, U.S. and Turkish engagement with various factions, particularly the Kurds. And, then there is the Israel-Iran situation which nearly exploded recently into real warfare only to be staved off at the last moment. Anyone of these conflicts in the Middle East could erupt at any moment into a much broader conflict which would have real consequences for the global economy.

17. Summary

Risks are always present. The fact that risks exist does not automatically mean that disaster is just around the corner. Time and policy adjustments can ameliorate or exacerbate risks. From an economic standpoint, we have come to understand that business cycles are a normal feature of an open market-based economy and a democratic system of governance. The build-up of excesses and subsequent unwinding of those excesses is a natural part of the business cycle process. It is messy business, but it is one that over several centuries has propelled economic growth and overall well-being to heights never imagined by the ancients.

But at least one highly-regarded economist, Desmond Lachman, who is a fellow at the American Enterprise Institute, believes that an economic and financial disaster will occur during 2019 and it will eclipse in severity the Great Financial Crisis.¹

“My long career as a macro-economist both at the IMF and on Wall Street has taught me that it is very well to make bold macro-economic calls as long as you do not specify a time period with which those calls will occur. However, there are occasions, such as today, when the overwhelming evidence suggests that a major economic event will occur within a relatively short time period. On those occasions it is very difficult to resist making a time-sensitive bold economic call.

So here goes. By this time next year, we will have had another 2008-2009 style global economic and financial market crisis. . . .

There are two basic reasons to fear another full-blown economic crisis soon. The first is that we have in place all the ingredients for such a crisis. The second is that due to major economic policy mistakes by both the Federal Reserve and U.S. administration, the U.S. economy is in danger of soon overheating, which will bring inflation in its wake. That in turn is all too likely to lead to rising interest rates, which could very well be the trigger that bursts the all too many asset price bubbles around the world.”

That, of course, is one person’s view. But it is a view that should not be dismissed cavalierly given that we are in the mature phase of the economic cycle and given the many significant risks that abound. ***The question to ponder is whether the occurrence of the crisis that Lachman foresees will be a***

¹Desmond Lachman. “A Crisis is Coming,” AEI blog post, reprinted from US News & World Report, February 14, 2018.

cleansing one that refreshes the vibrancy of the capital markets economic system or whether it will be another step along the road to the undermining of the American way of life that we celebrate as exceptional in the history of humankind.

IV. Goldman Sachs' "10 Questions for 2017"—U.S.—Assessment^{2,3}

In the remaining sections of this month's letter, I assess the accuracy of Goldman Sachs (**GS**) and my outlook for 2017 for the U.S. and global economies. To this assessment I add **GS**'s and my thoughts about likely developments in the U.S. and global economies during 2018.

Question #1—Will growth remain above trend?

GS View—Yes—correct

GS forecast year-over-year real GDP growth in 2017 to be 2.3 percent; it was 2.25 percent. But in some ways the economy was stronger than **GS** expected. For example, the unemployment rate fell to 4.1 percent compared to **GS**'s forecast of 4.4 percent

GS was correct in its expectation that financial conditions would be easier in 2017 compared to 2016 and that this would have a favorable impact on growth.

Bill's View—Yes—correct

However, I was a tad less optimistic with my expectation of 2.1 percent growth in real GDP.

Question #2—Will the incoming administration enact major tax-related legislation?

GS View—Yes—correct

GS cited three reasons, all of which proved accurate. First, the all-Republican Congress used the budget reconciliation process, which requires simple majorities of both houses, to pass budget and tax legislation. Second, tax reform was a key campaign promise. Third, tax reform has been a key policy priority for congressional Republicans and for Speaker Paul Ryan.

GS was correct in its expectation that focus would primarily be on corporate tax reform with simplification and a lower tax rate as an objective and that there would be incentives to encourage U.S. companies to bring production home.

GS also was correct in its expectation tax reform would include reductions in individual tax rates.

But, Congress took the entire year to enact tax reform. The delay resulted from the failed attempt to repeal the Affordable Care Act.

²Jan Hatzius and Zach Pandl. "10 Questions for 2017," US Economics Analyst, Goldman Sachs Economic Research, December 30, 2016.

³Jan Hatzius. "A Retrospective on 10 Questions for 2017," US Daily, Goldman Sachs Economic Research, December 19, 2017.

Bill's View—Yes—correct

However, I expected Congress to pass an infrastructure spending bill. This did not happen, but remains a possibility in 2018. Congress did authorize emergency spending to assist rebuilding from catastrophic hurricanes and wildfires and is likely to increase the amount considerably during 2018.

Question #3—Will the housing recovery continue?**GS View—Yes, at a moderate pace—correct**

GS expected employment and income growth to be positive factors that would offset the negative impact of higher mortgage rates and prices. This was generally correct, although interest rates rose less than expected, while housing prices rose more than expected—the two probably were offsetting.

GS was correct in its expectation that housing starts would move higher but would still be below the annual rate of 1.4 million consistent with net household formation rates and demolition of outdated homes. Housing starts rose from 1.18 million in 2016 to 1.21 million in 2017.

Bill's View—Yes, at a moderate pace—correct

I added the observation that lenders could ease credit underwriting standards and that would boost housing starts, if Trump regulatory appointees eased regulatory impediments. This did not occur but is still possible in 2018, particularly with the changeover in leadership of the Consumer Financial Protection Bureau.

Question #4—Will consumption continue to outperform capital spending?**GS View—No—correct as stated, but incorrect in some details**

GS expected real growth in consumption to slow as the benefits of lower energy prices play out. Correspondingly, GS expected investment growth, which was severely depressed by the plunge in energy prices, to recover. GS expected real consumer spending to rise 2.4 percent in 2017 compared to 2.7 percent in 2016. But consumption growth actually rose to 2.8 percent in 2017.

GS forecast that fixed business investment spending would rise 3.1 percent in 2017 compared to a decrease of -0.4 percent in 2016. GS was directionally correct, but business investment spending rose 4.7 percent in 2017 compared to a revised -0.6 percent in 2017. Simply put, the economy was stronger in 2017 than GS anticipated.

Bill's View—Possibly, real consumption growth will slow and real investment growth will improve, but real consumption could still grow a little faster than real investment—incorrect

I was altogether too pessimistic. Both consumption and business investment growth were considerably stronger than I expected, although I did acknowledge that the balance of risks to my outlook was that real investment growth could turn out to be stronger in 2017.

Question #5—Will the labor market overheat?**GS View—Yes, slightly—correct**

GS believed the labor market entered 2017 at or very close to full employment. Some labor market measures, such as the U-6 underemployment rate and the growth rate in nominal wages, which is a lagging indicator, suggested some slack remained. Other measures, such as the job openings rate and skills shortages, suggested the labor market was in the early stages of overheating. The unemployment rate fell more than **GS** expected and ended the year slightly below its estimate of the full employment unemployment rate.

Bill's View—Yes, but very slightly—partially incorrect

I expected employment growth to slow more quickly than it did. Payroll employment grew 171,250 monthly in 2017 compared to **GS**'s forecast of 163,000 and my assumption of 132,500. However, it seem likely that the non-accelerating inflation rate of unemployment declined during the year with the consequence that the labor market was only slightly overheated at the end of 2017.

Question #6—Will wage growth hit our 3.0%-3.5% estimate of its full employment level?**GS View—Yes—incorrect**

GS noted that wage growth had already firmed at the bottom end of the wage range at the beginning of 2017, with some help from a plethora of increases in state and city minimum wage laws. Although **GS** expected nominal wage growth to reach at least the lower end of its forecast range in 2017, it acknowledges that "... negative composition effects on aggregate wage growth, and an environment of weak productivity growth and soft inflation appear to account for most of ..." the gap between nominal wage rate growth in 2016 and historical experience. **GS** expected wage growth to reach the top end of its range in 2018 and then stabilize at that level. This was a big forecast miss as wage growth through the first three quarters of 2017 was only 2.5 percent, well below the lower end of **GS**'s forecast range.

Bill's View—No—correct

GS's forecast is based on the employment cost index (ECI) measure of nominal wage growth. My estimate of nominal wage growth is based on nonsupervisory and production workers who account for about 88 percent of total employees. There are methodological differences between the two measures and ECI covers all employees, so ECI is a more comprehensive measure of wage rate growth and, ideally, is the measure to forecast. Because of these methodological differences the two measures can rise at different rates over short periods of time, but growth rates tend to converge over much longer periods of time.

My forecast of nominal wage rate growth was 2.75 percent in 2017. My forecast was a bit high with wages for nonsupervisory and production workers rising 2.35 percent that wages of all employees rising 2.57 percent. I also observed that there was soft evidence that labor's wage negotiation clout has diminished over time with the decline in unionization and that this has resulted in longer lag times before wages fully adjust to changes in supply and demand in the labor market.

Question #7—Will inflation reach the Fed’s 2% target?**GS View—Yes—incorrect**

GS expected the **FOMC’s 2.0** percent core PCE inflation target to be reached by the end of 2017 due to labor market tightness and the waning of favorable impacts of past dollar appreciation. Core PCE inflation was 1.5 percent in 2017.

Bill’s View—No—correct

I observed that my econometric model and several other forecasters disagreed with **GS’s** conclusion because most of the impact of a tighter labor market had already impacted the core PCE inflation rate, while some residual benefits of past dollar strength remained to be realized. That said, reduced prices for cellular technology, which slowed inflation in 2017, were not anticipated, and may have had a temporary impact.

Question #8—Will the Fed hike faster than implied by market pricing?**GS View—Yes—correct**

GS was correct in its forecast that the **FOMC** would raise the federal funds rate three times in 2017 compared to the market’s expectation of two times.

Bill’s View—Yes—correct

My forecast for 2017 was consistent with **GS’s**.

Question #9—Will the market’s terminal funds rate estimate continue to rise?**GS View—Yes—incorrect**

GS’s terminal federal fund rate forecast was 3.25 percent in its 2017 forecast and remains at that level in its 2018 forecast. However, the **FOMC** lowered its median terminal federal funds rate projection from 3.00 percent to 2.75 percent. The market’s terminal federal funds rate fell from 2.5 percent to 2.1 percent.

Bill’s View—Yes—incorrect

My estimate of the terminal federal funds rate (average over the 2021-2026 period) at the beginning of 2017 was 3.35 percent, only slightly higher than **GS’s** estimate. My estimate of the terminal federal funds rate (average over the 2022-2027 period) at the beginning of 2018 is 3.25 percent, the same as **GS’s** forecast.

Question #10—Will the Fed start to shrink its balance sheet?**GS View—No—incorrect**

GS expected reinvestment of maturing principal to continue until at least the middle of 2018. Thereafter GS expected a very gradual reduction in the size of the balance sheet over a long period of time. The FOMC ceased to reinvest 100 percent of maturing principal in October 2017 and over time will gradually decrease the amount of reinvested principal to zero.

Bill's View—No opinion, but probably No—I should have stayed with “No Opinion”**V. Goldman Sachs’ “10 Questions for 2018”—U.S.⁴****Question #1—Will growth remain above the 2.2 percent average of the recovery so far?****GS View—Yes**

GS expects real GDP growth to average 2.7 percent in 2018 for three reasons: 1) strong momentum at the beginning of the year, 2) favorable impulse from easier financial conditions, which will diminish as the year progresses, and 3) a moderate boost from tax cuts and federal spending increases should add about 50 basis points. Growth momentum should moderate as the year progresses.

Bill's View—Yes, but somewhat slower than GS's forecast**Question #2—Will unemployment fall below the April 2000 trough of 3.8 percent?****GS View—Yes**

GS expects the unemployment rate to fall from 4.1 percent to 3.5 percent by the end of 2018. The assumes that potential GDP growth improves and moves closer to GS's long-term potential growth rate of 1.75 percent. It also assumed that the non-accelerating inflation rate of unemployment (NAIRU) declines.

Bill's View—Yes, but to a lesser extent than GS expects

I expect the unemployment rate to fall to between 3.7 and 3.8 percent. This higher forecast is based on assumed monthly employment growth of 144,000 compared to GS's forecast of 179,000.

⁴Jan Hatzius. “10 Questions for 2017,” US Economics Analyst, Goldman Sachs Economic Research, December 29, 2017.

Question #3—Will single family housing starts rise further despite adverse tax changes?**GS View—Yes**

Negatives include the diminished impact of the mortgage interest deduction because fewer taxpayers will itemize deductions, loan size eligible for the interest deduction will decrease from \$1 million to \$750,000, long-term interest rates will rise 50 basis points, and weak household formation. These negatives, according to **GS**, will be more than offset by an increase in the home ownership rate and the lack of single-family housing inventory. Multi-family housing starts will probably decline in response the increase in the vacancy rate during 2017.

Bill's View—No, about the same as in 2017

In addition to GS's negative and positive factors, increasing employment and incomes are positive factors, but a continuation of rapid increases in home prices will be a negative factor. It seems likely to me that all of these forces will cancel each other out.

Question #4—Will wage growth resume its acceleration?**GS View—Yes**

GS expects wage rate growth to accelerate in 2018 to about 3.0 percent because: 1) labor demand exceeds supply, 2) reported wage increases in 2017 were held down by statistical distortions, and 3) upper-income households deferred income in 2017 to take advantage of lower tax rates in 2018.

Bill's View—Yes, but to a lesser extent than GS is forecasting

Wage growth should accelerate from a range of between 2.4 percent (non-supervisory and production workers) and 2.6 percent (all employees) in 2017 to a range of 2.7 percent to 2.9 percent in 2018. Wage growth will be held back by a decline in NAIRU.

Question #5—Will core PCE inflation pick up from the current 1.5 percent pace?**GS View—Yes**

GS expects core PCE inflation to rise to 1.8 percent by the end of 2018 because: 1) an overheated labor market will cause wage rates to rise which, in turn, will put upward pressure on inflation, 2) the falling value of the dollar will raise import prices, and 3) one-off decreases in inflation in 2017 due to cell phone pricing will fall out-of-the year over year comparisons.

Bill's View—Yes

If anything, I think the risks are that core PCE inflation could be a little higher by the end of 2018 than the 1.8 percent **GS** is expecting. However, if NAIRU is lower than **GS** expects, inflation could come in slightly below **GS**'s forecast.

Question #6—Will the Fed hike more than the two hikes discounted in current market pricing?

GS View—Yes

GS expects the **FOMC** to raise the federal funds rate four times in 2018; the **FOMC** projected three increases in its December 2017 Summary of Economic Projections. **GS**'s view is based on its expectation of a substantial decline in the unemployment rate, which does not appear to fully discount for the possibility of a significant decline in NAIRU.

Bill's View—Yes, but to a lesser extent than GS is forecasting

I agree with the **FOMC**'s median projection of three increases. However, only two are possible if NAIRU is lower than **GS** expects and wage growth falls short of expectations.

Question #7—Will the Fed adjust its balance sheet normalization plan?

GS View—No

The Federal Reserve's balance will decrease from a monthly rate of \$10 billion at the end of 2017 to \$50 billion in October 2018. **GS** does not expect the **FOMC** to change its implementation plan.

Bill's View—No

As interest rates rise, the market value of the Federal Reserve's balance sheet will increasingly be below its book value. It has adopted an accounting treatment that avoids recording a book-to-market difference. As long as the **FOMC** pursues a strategy of not reinvesting maturing principal, it will not be compelled to recognize losses. The only change in the implementation plan that I believe is possible would be reducing planned balance sheet shrinkage, ending it altogether, or resuming large scale asset purchases. That would only occur if the economy goes into recession.

Question #8—Will market pricing of the terminal federal funds rate rise?

GS View—Yes

GS continues to expect the terminal federal funds rate to be 3.25 percent and expects market pricing to move up from the 2.1 percent market expectation that prevailed at the end of 2017.

Bill's View—Yes

My forecast of the terminal federal funds rate is consistent with **GS**'s. However, the terminal rate could be lower if NAIRU is a lot lower than what **GS** apparently thinks it is. **B of A** expects the terminal federal funds rate to be 2.75 percent, which is the same as the median **FOMC** projection. According to my model, a 2.75 percent terminal rate is consistent with **B of A**'s 4.2 percent NAIRU assumption.

Question #9—Will the yield curve invert?**GS View—No**

GS's measure of the yield curve slope is the difference between the 10-year Treasury note yield and the federal funds rate. The more customary measure of the yield curve slope is the difference between the 2-year and 10-year Treasury yields. **GS's** end of 2018 forecast for the federal funds rate is a range of 2.25 to 2.50 percent while its forecast for the 10-year Treasury yield 2.85 percent. This amounts to significant additional flattening of the yield curve from the 100 basis points that prevailed at the end of 2017, but does not result in yield curve inversion.

Bill's View—the yield curve (spread between 10-year and 2-year Treasuries) will flatten and possibly invert

At the end of 2017 the spread between the 10-year and 2-year Treasury yields averaged 56 basis points in December, down from 130 basis points in December 2016. The **FOMC's** large scale asset purchase program has taken considerable duration out of the market and depressed the term premium. As interest rates rise, the scarcity of long-term Treasury securities will continue to depress the term premium and this could result in the yield curve inverting as short-term rates continue to rise.

Question #10—Will financial conditions ease further?**GS View—No**

According to **GS**, financial conditions were 1.3 standard deviations below their long-term average at the end of 2017. This resulted from strong stock price appreciation, tight credit spreads, a weak dollar and stable long-term interest rates. Since the beginning of 2018, financial conditions have become even easier as stock prices have soared and the dollar's value has plunged. **GS** believes that the **FOMC's** monetary tightening policy will eventually result in tighter financial conditions. The risk is that the **FOMC** might feel compelled to accelerate raising the federal funds rate to take the steam out of an increasingly bubbly market.

Bill's View—No

Market mania, which has emerged in early 2018, results in easier financial conditions. This is a market condition that was sustained for a long period of time in the late 1990s and also prior to the Great Financial Crisis of 2007-09. But in both of these previous episodes, when financial conditions were too easy for too long, the reversal, when it finally came, was abrupt and severe. This might not occur in 2018, in which case both **GS** and **I** will have to confess at the end of 2018 to being incorrect. But we should hope that we are correct because, if we are not, the eventual correction will rival those of 2001-03 and 2007-09 in severity.

VI. Goldman Sachs' "10 Questions for 2017"—Global⁵

Question #1—Will global growth accelerate?

GS View—Yes, although most of the improvement is likely behind us in sequential terms—**partially correct**

GS expected global real GDP growth to rise from 3.0 percent in 2016 to 3.6 percent in 2017. It is likely that the final accounting will show the global economy grew 3.8 percent in 2017. As 2018 begins, global growth momentum is very strong and accelerating further.

Bill's View—Yes, but the balance of risks is to the downside relative to **GS's** view—**incorrect**

As it turned out the balance of risks was to the upside. I underestimated the powerful stimulus of years of monetary ease and the waning impact of fiscal austerity. I concurred with **GS's** view about the probable impact of the upswing in global optimism, central bank friendly policy, with the exception of the U.S., reduced emphasis on austerity and greater willingness to engage in fiscal stimulus. However, I was concerned that substantial political risks, particularly in the European Union, and the possibility of negative trade and immigration policies in the U.S. might ignite a dollar squeeze with disruptive consequences for global financial markets and negative impacts on financial conditions. Political risks did not materialize as populist political movements, though making a lot of noise and some progress, did not ultimately have any appreciable impact on governance, which remained traditional and centrist in key countries, such as France and Germany. Italy, which posed the greatest political threat managed to stave off early elections in 2017.

In addition, President Trump's bluster about trade and "America First" did not result in any meaningful negative impacts on global trade during 2017. The dollar declined in value rather than appreciating and this development eliminated the threat of a dollar squeeze.

Longer run, which means beyond 2017, real global growth above 3.0 percent is simply not sustainable for a variety of reasons. First, as economies mature, the rate of growth always slows to the potential level consistent with population growth and increases in productivity. Huge catch-up increases in productivity, such as has been occurring in China for the past several years, disappear in mature economies. Population growth slows dramatically in more developed economies. China will lead the way and because of the size of its economy this will have a substantial depressing effect on global growth.

Question #2—Will global fiscal policy be eased?

GS View—Only slightly—**correct, but it took longer to develop than forecast**

GS expected a \$200 billion fiscal stimulus in the form of tax cuts to be enacted in the U.S. by the middle of 2017 which would boost real GDP growth by about 25 basis points late in the year. As it turned out, the U.S. fiscal stimulus did not become law until the end of 2017. The benefits will occur primarily in 2018 and 2019 and the will be somewhat larger than

⁵Jan Hatzius. "10 Questions for 2017," US Economics Analyst, Goldman Sachs Economic Research, December 29, 2017.

GS originally expected. In addition, Congress added more stimulus than expected by lifting spending caps in early 2018 and authorizing substantial spending for disaster relief. Thus, GDP growth will probably be boosted by 50 to 60 basis points in 2018 and also in 2019 to a somewhat lesser extent.

GS also expected more expansionary fiscal policy to boost growth in the euro area by about 50 basis points in 2017. This forecast appears to have been on the mark as euro area growth accelerated from 1.6 percent in 2016 to 2.3 percent in 2017.

In addition, **GS** thought budget consolidation in Japan and the UK would probably depress real GDP growth in those countries modestly. This forecast was correct for the U.K., but was wide of the mark for Japan as growth surged from 1.0 percent in 2016 to 1.6 to 1.8 percent in 2017. The result in Japan occurred because of the cumulative effects of substantial monetary stimulus and the decision to postpone raising the value added tax.

Bill's View—no good reasons to disagree with GS's view—correct to the extent that GS was correct

Question #3—Will the world turn toward protectionism?

GS View—Yes, but the uncertainty is very large—incorrect

As 2017 commenced, the risk was that the Trump Administration would raise tariffs on imports. The concern was that unless increases were modest, retaliation seemed probable. More consequential would be adopting destination-based taxation for U.S. imports and exports.

Tariffs were not raised and Congress quickly dropped consideration of adopting a destination-based tax regime. Some relatively inconsequential tariffs were raised and President Trump cancelled the Pacific Trade Pact. Overall, anxieties were misplaced and global trade actually accelerated during 2017 in response to booming economic activity.

Bill's View—Yes, not only is uncertainty very large but risks of a dollar squeeze and risks of contagion and severe stress in global financial markets are also very high—incorrect

I observed that theory posits that destination-based taxation of imports and exports should lead to an increase in the value of the dollar sufficient to offset the effect of the tax. The problem is that if the corporate tax rate is 20 percent (reduced from the current rate of 35 percent as part of corporate tax reform), the dollar would have to appreciate by 25 percent according to theory to neutralize the effects of the tax. In practice a full adjustment seems unlikely and what adjustment occurs would probably take time to be fully realized. Nonetheless, the adjustment in the dollar is still likely to be large and could trigger severe consequences in some emerging market economies and perhaps catalyze a dollar squeeze and broader-based global financial markets contagion.

When Congress dropped consideration of destination-based taxation, all of the potential risks vanished. The dollar, instead of appreciating in value, fell 7 percent on a trade-weighted basis during 2017.

Question #4—Will China slow?

GS View—Yes, but only slightly—technically incorrect, but of no great significance

GS expected China's real GDP growth to slow from 6.7 percent in 2016 to 6.5 percent in 2017. Instead, growth rose to 6.8 percent. I observed that GS's forecast difference was of no real significance because China has shown repeatedly that it can manage the number by force-feeding growth through credit expansion. In the long run growing credit at twice the rate of nominal GDP is not sustainable and will lead to stagnation or worse, but in China's managed economy this policy strategy can persist for a very long time before the inevitable consequences take hold. That will not happen in 2017. My observation was on the mark.

Bill's View—It doesn't matter because the policymakers still have the ability to make the numbers—correct

I observed that China was not likely to pose either strong upside or downside risk to the global economy in 2017, but this could change if the U.S. and China engaged in a trade war that combined with increasingly hostile foreign policy relations. Foreign policy relations between China and the U.S. were relatively benign during 2017 and no trade war emerged.

Question #5—Will labor markets return to full employment?

GS View—Yes in the U.S., but no in the Euro area and Japan—correct for the euro area, incorrect for Japan

GS expected slight overheating in the U.S. Most countries in the Euro area still have substantial amounts of labor slack, particularly in countries like Spain, Portugal, Greece, Italy and even France. Unemployment fell in these countries during 2017 but considerable slack remained at the end of the year.

Bill's View—Yes in the U.S., no in the Euro area—correct

I observed that GS's "no" for Japan made no sense. Japan's unemployment rate was already very low and got even lower during 2017. By most accounts Japan's labor market is exceptionally tight.

Question #6—Will Euro area core inflation move up significantly?

GS View—No—correct

GS argued that total inflation would increase given the firming in energy and commodity prices. However, core inflation was likely to remain anchored at a little under 1.0 percent throughout the year. Indeed, total inflation rose from 0.2 percent in 2016 to 1.5 percent in 2017, but core inflation actually rose slightly from 0.8 percent to 1.0 percent.

Bill's View—No—correct

GS's view and analytics are sound.

Question #7—Will monetary policy divergence strengthen?**GS View—Yes—correct**

GS observed that the European Central Bank (ECB) was committed to quantitative easing through the end of 2017 because significant slack remained in European economies. Likewise, the Bank of Japan (BOJ) remained committed to easy monetary policy as it continued its quest to boost both the rate of Japanese growth and inflation. However, GS added that the direction of U.S. policy was clearly toward tightening, so divergence was already locked in and would escalate each time the FOMC raised the federal funds rate.

This is exactly what transpired during 2017. Both the ECB and BOJ extended large scale asset purchases and intentionally pursued a policy to depress interest rates. In the meantime, the FOMC raised the federal funds rate by 75 basis points and began to unwind its balance sheet. Importantly, during 2017, the divergence of monetary policies did not have any negative consequences on economic activity and financial markets.

Bill's View—Yes—correct

GS's view and analytics are sound.

Question #8—Will the UK head for a “soft” Brexit?**GS View—No—unclear but probably correct**

GS stated: “The UK government’s ‘red lines’ for the Brexit negotiations—immigration controls and exclusion from the jurisdiction of the European Court of Justice—are incompatible with participation in the EU’s single market.” However, it is possible that some kind of “. . . preferred access to the single market will be negotiated involving tariff-free trade in goods and that agreement on a transitional arrangement for the financial services sector will be reached.” So, while this outcome, if it comes to pass, would fall short of a full “hard” Brexit, nonetheless it would have negative implications for the UK economy and the value of the pound.

Theresa May initiated the two-year exit process in late March. She then called an early election, expecting to cement the Conservative Party’s majority. Instead, the Conservatives lost seats and their majority and were forced to settle for a weak minority government. To date other parties have chosen to let the minority government stand. Political weakness has undermined the U.K.’s negotiating leverage with the European Union. With little more than a year left there is little clarity about the eventual outcome of Brexit.

Bill's View—No opinion—correct in the sense that I believed the situation was too fluid and complicated politically to make a firm forecast

GS's evaluation appears reasonable to me, but I do not have real expertise in this matter.

Question #9—Will the Euro area crisis reappear?**GS View—No, but this is a risk—correct—the risk was not realized**

GS observed that economic performance differs considerably among Euro area members and convergence is impossible within the straightjacket of the euro. Excruciatingly painful internal adjustments in countries like Ireland and Spain increased their competitiveness. The same has not happened in France or Italy because of political paralysis. Greece remains a basket case. Nonetheless, modest improvements in growth in 2017 and an accommodative ECB will limit the likelihood that crisis reappears during 2017. Keeping rates low and providing plenty of liquidity can buy a lot of time. But that's all that can be done because the fundamental design flaws of the European Union (EU) have not been addressed and as the political disintegration progresses they cannot be addressed.

GS added that political risk continued to escalate and elections in the Netherlands, France and Germany could reignite the crisis. Experts do not expect any of these elections to trigger crisis, but then the experts were wrong on the Brexit vote and on Trump's election.

This analysis turned out to be accurate. While populists made some inroads and centrist parties lost ground, centrist parties retained control of the governments in key countries. Improved economic conditions probably helped dilute populist gains. However, the durability of the EU is likely to be tested whenever the next global recession unfolds.

Bill's View—No, but this is a risk—correct, the risk was not realized

It is only a matter of time, perhaps several years still, until the EU breaks up and is replaced by alternative economic and political systems involving smaller groupings of countries with more compatible economies.

Question #10—Will the Bank of Japan stick to its 0% yield curve target?**GS View—Yes—correct**

GS argued that the Bank of Japan's policy of targeting the 10-year government bond yield at 0 percent and thus a 0 percent yield curve target would become increasingly challenging as interest rates rise in the rest of the world. As Japan's rate differential with the rest of the world increases, the value of the yen would decline. But, this would be good for the profits of Japanese companies and could actually help accelerate attainment of the nominal inflation rate goal of 2.0 percent. The risk is that the rate differential becomes so large that the Bank of Japan runs out of bonds to purchase to maintain the 0 percent yield curve objective.

Japan's zero yield curve policy worked during 2017. The economy grew well above potential; the labor market grew even tighter, the yen remained weak, inflation edged up slightly, and company profits were robust. However, as we enter 2018, the rate differential GS worried about emerging in 2017 is growing rapidly; the Bank of Japan is running out of assets to purchase and the yen has begun to strengthen. Japan will be challenged in 2018 to sustain its aggressively stimulative policy in the global economic and financial markets that are evolving rapidly.

Bill's View—Yes—correct

I agree with **GS's** views. As long as the world is going the other direction, maintaining the 0 percent yield policy plays in Japan's favor.

VII. Goldman Sachs' "10 Questions for 2018"—Global⁶**Question #1—Will the global economy continue to grow above trend?****GS View—Yes**

GS expects global real GDP growth to rise from 3.8 percent in 2017 to 4.1 percent in 2018. This above consensus view is based on momentum, easy financial conditions, and U.S. fiscal stimulus. **GS's** global current activity index, a proxy for real GDP growth, registered 5.3 percent in January. U.S. fiscal stimulus will more than offset diminished fiscal support in Europe and Japan.

Bill's View—Yes, however financial conditions could tighten and reduce growth

The risk to **GS's** global growth outlook will turn upon whether financial conditions remain easy. European and Japanese monetary policies are intentionally highly stimulative and policymakers intend that to continue. However, the U.S. economy increasingly is in danger of overheating. If U.S. inflation surprises to the upside, the **FOMC** might tighten U.S. monetary policy more quickly. Less accommodative financial conditions in the U.S. would probably spill over to other financial markets. Already the U.S. financial markets have provided a bit of a scare as volatility returned with a vengeance in early February. The scare was driven primarily by the sudden unwinding of inverse volatility products in a classic short squeeze. It is likely that U.S. markets will settle down; however, investors are now focused on the potential consequences of an overheating U.S. economy for inflation and higher interest rates and this could eventually become meaningful later in the year.

Longer run, which means beyond 2018, real global growth above 3.0 percent is simply not sustainable for a variety of reasons. First, as economies mature, the rate of growth always slows to the potential level consistent with population growth and increases in productivity. Huge catch-up increases in productivity, such as have been occurring in China for the past several years, disappear in mature economies. Population growth slows dramatically in more developed economies. China will lead the way and because of the size of its economy this will have a substantial depressing effect on global growth.

Question #2—Will emerging markets growth pick up?**GS View—Yes, except for China**

GS expects growth in emerging markets to accelerate from 5.0 percent in 2017 to 5.3 percent in 2018. China's high growth rate skews emerging markets growth rates upward. **GS** expects

⁶Stehn, Sven Jari. "10 Questions for 2018," Global Economics Analyst, Goldman Sachs Economic Research, January 5, 2018

Chinese growth to slow from 6.9 percent in 2017 to 6.5 percent in 2018. However, growth in remaining emerging markets is expected to rise from 3.7 percent to 4.0 percent. As 2018 commences GS's current activity indicator, a proxy for real GDP growth, for emerging markets was 6.7 percent in January. This means that there is extremely strong momentum and this suggests that risks to emerging markets growth is to the upside, notwithstanding GS's optimistic view. But, a year is a long time and surprises can turn momentum, sometimes very quickly.

Emerging markets are benefiting from enormous monetary and fiscal policy stimulus in developed markets. With the exception of China, most emerging markets countries have substantial spare capacity, which will enable above potential growth during 2018.

Bill's View—yes, but China could surprise to the upside

Emerging markets will follow developments in developed markets. If financial conditions tighten substantially in developed markets, the global ripple effects will slow growth in emerging markets. This is not a probable risk but a possible one, which bears watching.

Question #3—Will structural reforms in China slow growth sharply?

GS View—No

GS expects China's real GDP growth to slow from 6.9 percent in 2017 to 6.5 percent in 2018. 2017 was a pretty quiet year for China, at least as far as the rest of the world was concerned. China's major global contribution was somewhat stronger economic activity, which was a catalyst in accelerating global growth in 2017. China was able to increase growth while simultaneously better controlling rampant credit growth. The 19th Communist Party Congress reelected President Xi Jinping for another five-year term and elevated him to supreme leader, which has been held by only two others—Mao Zedong and Deng Xiaoping. President Xi set a policy course to provide Chinese citizens a "Better Life," which involves broadening the policy agenda beyond the singular focus on economic growth that has prevailed for the past several decades.

GS expects China's challenge in 2018 to move forward on structural reforms without slowing the growth rate materially. High on the list will be continuing to rein in credit creation and shadow banking activities, constraining housing price speculation, and implementing environmental policies. There could be modest deregulation of certain financial activities, such as capital controls and market access of foreign companies. Infrastructure spending, which has been the driver of Chinese growth, and has had powerful knock on impacts on global commodities prices and economic activity, will diminish slowly in favor of more consumer oriented growth. Eventually, this transition will slow China's torrid growth rate substantially but that is a prospect beyond 2018.

Bill's View—No, but It doesn't matter because the policymakers still have the ability to make the numbers

China's leadership knows that it must respond to growing affluence of many Chinese by providing not only jobs but improving the quality of life. This transition is essential to maintain social and political stability, which are necessary to maintain the Party's sway over China. This has involved centralizing political and economic policy control with substantial assistance

from President Xi's anti-corruption campaign. However, centralization of power and reliance on state-owned enterprises as the primary engines of economic policy is not without potentially substantial risks. But that is a worry for the future, not for 2018.

When it comes to the annual rate of GDP growth, a slight slowing is not likely to pose either strong upside or downside risk to the global economy in 2018. Besides, precise numbers that differ by a few tenths of a percentage point aren't particularly meaningful indicators of strength or weakness because China engages to a certain extent in managing the numbers.

Question #4—Will developed market economies return to full employment?

GS View—Yes, except for the Euro area

In the aggregate, **GS** believes that some slack remained in developed market economies at the end of 2017, which means there is still room for above potential growth in 2018 without unleashing inflation. However, the bulk of excess capacity is located in the Euro area. While unemployment rates have been falling in EU countries, collectively, with the exceptions of Germany and the U.K., unemployment remains quite high. Japan and the U.S. are another story where, arguably, both economies entered 2018 at full employment. Above potential growth in both of those countries during 2018 is probable and will exacerbate accumulating imbalances. **GS** expects slack in developing market economies to be eliminated by the end of 2018. This poses risks to continued strong economic growth in 2019 and beyond.

Bill's View—except for the Euro area

GS's expectations generally seem reasonable. The real issue and risk is how long above potential growth momentum can continue before the inevitable reversion to the mean or recession kicks in. **GS** estimates that long-term potential growth in developing market economies is 1.4 percent, a full percentage point below expected growth of 2.4 percent during 2018.

Question #5—Will core inflation move up?

GS View—Yes

GS acknowledges that inflation was lower in 2017 than it had expected, but argues that idiosyncratic factors were primarily responsible. The links between economic slack and inflation and inflation expectations remain intact. So, it naturally follows that as spare capacity diminishes, inflation should move up and similarly as inflation expectations rise.

Bill's View—Yes, but with caveats

I agree with **GS's** assessment. My econometric model indicates that inflation should rise in the U.S. during 2018 as the economy grows above potential and moves substantially above full capacity. The risk remains, however, as occurred in 2017, that inflation will not rise as much as expected. That could occur due to idiosyncratic factors, which **GS** faults for its forecast miss in 2017, or it could occur because structural changes in how the economy works have weakened and will continue to weaken the historical relationship between economic slack and inflation.

However, a risk pushing in the other direction for greater than expected increases in inflation during 2018 is the possible outbreak in inflation expectations. In recent years inflation expectations have been very subdued. An increase in inflation expectations can lead to an acceleration in the timing of economic decisions which then becomes self-fulfilling by driving up demand relative to supply. While the recent return of financial markets volatility in early February may abate, one consequence—the return of higher inflation expectations—is likely to remain. The risk is that as global economic activity continues to run hot during 2017, inflation expectations might take off, rile financial markets, and tighten financial conditions, and in so doing shorten the length of economic expansion and accelerate the timing of onset of recession.

Question #6—Will productivity continue to rebound?

GS View—Yes

GS observes that productivity in developed market economies has moved up from a paltry 0.2 percent in mid-2016 to 1.0 percent at the end of 2017. Its analytical work suggests further improvement is likely. There is some relatively simple logic behind this forecast. There is a strong linkage, with a lag of one to two years, between increases in investment spending and improvements in productivity. When economic growth is strong and slack is diminishing, as typically occurs in the mature part of the business cycle, there is ample incentive for businesses to increase capital expenditures and eke out more output with an increasingly constrained supply of labor.

Bill's View—Yes, but this is a murky area that is not well understood

In theory and based upon historical patterns, **GS's** expectation that productivity should rebound in 2018 is well-grounded. My econometric model indicates that productivity growth in the U.S. is poised to increase from its three-year average annual rate of growth of 0.85 percent at the end of 2017 to 1.1 percent at the end of 2018, 1.4 percent at the end of 2019, and 1.7 percent at the end of 2020. Obviously, three-year averages mask shorter-term momentum, which should peak above 2 percent by the end of 2019. These forecast increases in productivity will be driven by a substantial acceleration in investment spending that commenced in 2017 and will gather further momentum during 2018. Not only is the reduction in economic slack a current driver of higher productivity, the “Tax Cuts and Jobs Act” will provide substantial incentives in the U.S. to increase and advance the timing of investment spending during 2018. The NFIB survey of small businesses and Evercore ISI's surveys corroborate this expectation.

However, the more important question is whether the expected improvement in productivity will prove to be fleeting and simply an outcome of the mature phase of the business cycle rather than a permanent and sustained step up in the secular trend in productivity growth. Vigorous debate continues on that subject and no consensus has emerged. That is a subject I have discussed in previous letters and is a subject I will return to again in a future letter.

Question #7—Will the Fed hike more than priced?

GS View—Yes

GS reiterated its forecast made a year ago that the **FOMC** will raise the federal funds rate four times during 2018. At the time **GS** originally made this forecast it was out of sync

with consensus opinion. However, as the global economy has strengthened and Congress has passed legislation to cut taxes and increase spending, this call is looking much more reasonable. Nonetheless, market pricing, although it has moved up some, still is much less hawkish. The market has priced in only 2 hikes during 2018 and a total of three by the end of the first quarter of 2019. The median view of **FOMC** members is 3 increases in 2018 and that is what most other forecasters expect for 2018.

Bill's View—Yes, but I am less certain and am forecasting three to four increases during 2018

I agree that the market remains too dovish but think it's a toss-up whether the FOMC hikes three or four times in 2018. Given the strength of economic momentum at the beginning of 2018, the balance of risks is in the direction of four increases rather than two. Whether the FOMC raises the federal funds rate four times during 2018 probably will turn on how inflation behaves as the year unfolds.

Question #8—Will the ECB keep rates on hold?

GS View—Yes

This forecast is pretty much a certainty because the European Central Bank (ECB) has promised to continue large scale asset purchases and although tapering in the amount purchased could occur during 2018, purchases are likely to continue through December. As long as the ECB is engaged in quantitative easing through large scale asset purchases, it is highly unlikely that it will tinker with interest rates. Employment remains well short of full employment potential and core inflation is likely to remain stuck in the vicinity of 1.0 percent, which is well short of the ECB's mandated policy target of 2.0 percent.

Bill's View—Yes

GS's forecast and evaluation appears reasonable to me. The only possible risk to this outlook would most likely take the form of increased pressure on the ECB to taper large scale asset purchases more quickly.

Question #9—Will the BoJ make changes to its yield curve control regime?

GS View—No

GS observes that unemployment is at a 25-year low and the economy is growing faster than the underlying potential rate. Ordinarily it would be almost automatic for the BoJ to tighten monetary policy through increases in interest rates. That is not likely to happen because the BoJ appears committed to continuing large-scale asset purchases and maintaining its zero-interest rate policy for 10-year government bonds, which is referred to as a "yield curve control regime." Japan appears to have extricated itself from the deflationary trap it was in for many years, but it is nowhere close to achieving a 2 percent target inflation rate, although the core inflation rate is edging up and might reach 1.0 percent during 2018. It will be hard to push inflation much higher because Japan's shrinking population and labor force imparts a natural downward bias to inflation.

Bill's View—No, but risks of the consequences of a highly stimulative monetary policy in a world that is moving in the direction of tighter monetary policies could become troublesome

Japan really has no other policy option and the current extraordinarily easy monetary policy has been successful in reflatting the Japanese economy. But as interest rates rise in other countries, Japan's rate differential with the rest of the world will increase and the value of the yen would probably decline. This would be good for the profits of Japanese companies and could actually help accelerate attainment of the nominal inflation rate goal of 2.0 percent. The risk is that the rate differential becomes so large that the Bank of Japan runs out of bonds to purchase to maintain the 0 percent yield curve objective.

Japan's zero yield curve policy worked during 2017. The economy grew well above potential; the labor market grew even tighter, the yen remained weak, inflation edged up slightly, and company profits were robust. However, as we enter 2018, the rate differential GS worried about emerging in 2017 is growing rapidly; the BoJ is running out of assets to purchase and the yen has begun to strengthen. Japan will be challenged in 2018 to sustain its aggressively stimulative policy in the global economic and financial markets that are evolving rapidly.

Question #10—Will the other G10 economies hike in 2018?

GS View—Yes, except for Switzerland

GS observes that the economies of other G10 countries, including the U.K., Canada, Sweden, and New Zealand, are already operating above full employment. While inflation is above target only in the U.K., robust economic growth and rising commodity prices will put upward pressure on inflation in these countries. The exception is Switzerland where price pressures remain limited. Moreover, Switzerland has incentive to follow the ECB's lead to avoid inflating the Swiss currency.

Bill's View—Yes

GS's view seems reasonable and I have no reason to disagree or provide a caveat.

VIII. GavekalResearch's "The Big Questions For 2018"⁷

GavekalResearch produces meaty and thoughtful economic and market research. Its research is proprietary and, thus, is not available to the general public. Unlike some, GavekalResearch does not forge consensus among its various analysts. Thus, investors benefit from a variety of views which sometimes differ considerably.

⁷Kaletsy, Anatole. "Big Questions For 2018," The Daily, GavekalResearch, January 12, 2018. (This is a proprietary publication which is not available publically.)

Question #1—Will 2017’s change in global growth leadership from the U.S. to Europe and emerging markets continue?

Gavekal—Yes

Gavekal’s argument for “yes” is simple. Europe and many emerging markets economies still have slack but the U.S. does not, which means that the U.S. cannot continue to grow above its potential rate. But, Gavekal argues that this outcome is not a “game changer,” it simply extends the current trend.

Bill’s View—No

Growth leadership will continue to come from the U.S. thanks to the enormous fiscal stimulus Congress has put in place. U.S. leadership is time-limited, as Gavekal suggests because it is already operating at full capacity, but U.S. leadership is likely to persist for most of 2018.

Question #2—Will inflation accelerate in the U.S., but not in other major economies?

Gavekal—Yes

Gavekal’s argument for “yes,” rests on the same logic. The U.S. economy will overheat during 2018 and put upward pressure on inflation. Because most other major economies have remaining slack, there will be less risk that inflation moves higher. Gavekal believes this development will be a “game changer.” It will result in more volatile market conditions and lead to underperformance by U.S. equities.

Bill’s View—Yes

Gavekal’s forecast seems reasonable. We already have experienced a taste of increased market volatility in early February.

Question #3—Will eurozone and emerging markets equities again beat the U.S., as they did in 2017?

Gavekal—Emphatic Yes

Putting aside currency exchange rates, European equities are not overvalued as are U.S. equities. Gavekal thinks European equities will be supported by a relatively stable value of the euro and only modest weakness of the dollar, which would contribute to the underperformance of U.S. equities. This forecast is not a “game changer,” but, if correct, will continue trends that began in 2017

Bill’s View—Probably Yes

Gavekal’s logic seems reasonable; however, I am not versed well enough in the vagaries of global equity markets to offer an independent opinion.

Question #4—Will political conditions continue to stabilize and financial expectations therefore improve in all five of the BRICS—Brazil, Russia, China, India and South Africa?

Gavekal—Yes

Improved political stability in the BRICS will reduce the uncertainty discount in domestic equities. According to Gavekal, this is another reason to expect outperformance of emerging markets equities.

Bill's View—Probably Yes

Gavekal's logic seems reasonable; however, I am not versed well enough in the vagaries of global equity markets to offer an independent opinion. Recent political turmoil in South Africa may make it an exception. In Russia, Putin is up for re-election, which often creates the potential for political instability. However, Putin's minions have forced out prospective opponents, so the outcome of the election is certain. Brazil also will have a presidential election in 2018. Former president Lula is leading in the polls, but fraud charges may force him out of the race.

Question #5—Will the increase in the U.S. crude oil price above \$60 per barrel be sustained?

Gavekal—No

Gavekal has been of the view for a long time that oil will trade in a range of \$40 to \$55 a barrel. Recently oil prices have been approximately \$10 per barrel above the top end of the range. The breakout in prices has been caused by increased global demand, tighter inventories, and intentional production cutbacks by Saudi Arabia. Gavekal believes higher prices are not sustainable because U.S. shale oil production can be ramped up very quickly and at recent prices it is profitable to do so. Gavekal observes that if this forecast turns out to be wrong, it will be a "game changer," because it would contribute markedly to inflationary pressures in the U.S.

Bill's View—No, agree with Gavekal's logic

Although Gavekal's argument that U.S. oil production will increase substantially during 2018 makes sense, there is risk that global growth will be strong enough to absorb added U.S. production without meaningful downward pressure on oil prices.

In the longer run, oil prices should be influenced by the production costs of the marginal producer. That cost is well within the \$40 to \$55 per barrel range and probably toward the lower end of the range. When global growth slows and oil demand slackens relative to supply, prices should drop, perhaps abruptly as they did in late 2015 and early 2016. In other words, the boom-bust pattern of oil prices seems likely to repeat.

Question #6—Will technology-based assets underperform "old economy" stocks?

Gavekal—Yes

Gavekal cites three reasons for probable underperformance of technology assets. First, investors love affair with technology companies increasingly are being tempered by emerging political risks stemming from their behavior as price maximizing monopolies rather than productive innovators. Second, Gavekal argues that the natural monopolies, which the FAANGs (Facebook, Apple, Amazon, Netflix and Google) have profitably exploited, may not apply to the next generation of technology businesses, such as Tesla, Uber, and Airbnb. Third, the speculation in crypto-currencies and the recent crash in valuations could be the proverbial canary in the coal mine indicating bullish sentiment is coming to an end (this argument was written before the dramatic reversal in U.S. equity prices occurred in early February).

Bill's View—Yes

U.S. stocks in general are overvalued, even after the recent modest correction. This has been the case particularly for large capitalization companies, which include all of the technology-based companies. It seems possible that these stocks will continue to do well based upon profit growth, but the outsized valuations will probably disappear as speculative fever abates.

APPENDIX

Assessment of Outlook—2018 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 2018 U.S. and global economic outlook and risks to the outlook are listed below. As events unfold during 2018, 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 “✓”.

In general, 2018 should be a good year economically both in the U.S. and globally. Economic growth accelerated in all parts of the world during 2017 and considerable momentum will carry over into 2018. In addition, the passage of the “Tax Cuts and Jobs Act” in late 2017 will provide strong fiscal stimulus in the U.S. over the course of 2018 and 2019. However, the U.S. economy begins 2018 operating at full capacity and many global economies are approaching full capacity. Strong, above trend momentum in economic activity, will result in a buildup in imbalances. Optimism and favorable feedback loops will contribute to growth momentum in 2018 but this will also contribute to larger and more worrisome imbalances as time passes. Thus, the potential severity of risks will build during 2018. Realization of risks may occur before the year ends, but past experience suggests that positive momentum could persist for a time longer than the next 12 months, with the consequence that the eventual and inevitable correction of large imbalances could be very painful.

Forecasting accuracy, which is always difficult, becomes much more so when the economy is strong and above the long-term sustainable trend level, which is the situation in which the U.S. economy finds itself currently. The difficulty in forecasting involves pinpointing the turning point. Almost no one does this well. Recession forecasting models are relatively crude and forecast lead times have been very short. What we know from experience is that recessions occur when the economy becomes overheated. The timing of onset, however, depends upon human psychology. And, when human psychology is highly positive, as it is currently, it tends to feed upon itself and sustain momentum.

1. **U.S.—January Assessment:** U.S. stock markets began the year like a rocket blasting off. The S&P 500 set new records on 14 of 21 trading days and increased 5.6%. Prices soared on other classes of risk assets, such as the 10% increase in oil prices. Conversely, bond prices plunged; the 10-year Treasury note yield rose 32 basis points to 2.72% as investors responded to strong growth momentum and increased concern about the threat of rising inflation stemming from an overheated economy. As February began fear of an overheating economy and potential increases in inflation clobbered the stock market and a substantial portion of the January gains vanished, while long-term bond yields continued to rise. Financial conditions tightened considerably, primarily due to the decline in stock prices.
 - ✓ **The Chicago Federal Reserve’s National Activity Index increased to 0.27 in December from 0.11 in November (an index value greater than zero indicates that economic activity is accelerating)**
 - ✓ **The Conference Board’s index of leading economic indicators rose 0.6% in December after rising 1.3% in October and 0.5% in November**
 - **2018 real GDP Y/Y** growth projections range from 2.3% to 2.8%. The FOMC’s central tendency Q4/Q4 projections range from 2.2% to 2.6%. (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 upside because of federal tax cuts and spending increases, robust optimism and strong momentum in global economic activity.

✓ 2018 and 2019 real GDP forecasts have been revised upwards to reflect passage of the federal budget resolution to raise spending caps for fiscal years 2018 and 2019; the revised forecast range for 2018 is 2.5% to 3.0%

✓ Q1 2018 real GDP data will not be released until late April

✓ Q1 real GDP forecast = 2.6% (GS); 2.0% (B of A, which incorporated the impact of the disappointing retail sales data)

✓ GS's U.S. Current Activity Indicator (CAI) is well above the long-term potential level of 1.5% and GS's 2.7% 2018 forecast: CAI was 3.7% in January compared to 4.0% in December; the CAI is a proxy for real GDP growth

✓ B of A's revised 2018 forecast is 2.9% and GS's is 2.9%; my unrevised "BASE" scenario forecast is 2.4% and my "Strong Growth" scenario is 2.4%

✓ FOMC's unrevised 2018 Q4/Q4 central tendency range is 2.2%-2.6%

- **Real GDP output gap**, which disappeared during 2017, will become positive, which means the economy will overheat during 2018. By the end of 2018 the positive output gap should be in a range of 0.7% to 1.1%. (CBO will revise its estimates of potential real GDP growth, probably in February 2018 and again during the summer of 2018, which will change the forecast of the end of the year output gap.)

✓ Based upon CBO's estimate of potential real GDP and Q4 2017 real GDP, the output gap at the end of 2018 was 0.0%; the economy was operating at exactly full capacity

+ No change in the 2018 forecast of a positive output gap of 0.7% to 1.1%, indicating an overheating economy

- **Potential structural rate of real GDP growth** will remain well below actual real GDP growth during 2018 in a range of 1.5% to 1.7%. Long-term potential real GDP growth will edge up in coming years to between 1.7% and 1.9%.

+ No change in forecast

- **Productivity** should rise during 2018 from approximately 1.2% in 2017 to a range of 1.3% to 1.5% as growth improves and investment increases; it will fall well short of the historical 2.1% average.

✓ Productivity was 1.25% Y/Y in 2017 (1.06% Q4/Q4)

- The revised 2018 forecast is a range of 1.2% to 1.3% Y/Y

- **Payroll and household employment** growth should slow during 2018 because employment is above its long-term natural level and 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 2018, payroll and household employment growth should average between 140,000 and 180,000 per month during 2018.

✓ Payroll employment data for the past two years was benchmarked in January and raised total payroll employment by 230,000; average monthly employment increased from 186,667 to 195,333 in 2016 and from 171,250 to 181,083 in 2017

- January payroll employment increased 200,000

- Conference Board's difference between jobs plentiful and hard to get widened to 21.2% in January from 17.6% in December

- Evercore ISI employee placement index (upward pressure above 50; downward pressure below 50): December = 55.4; January = 54.9; February 16 = 57.6

- **Employment participation** should remain relatively constant during 2018 in a range of 62.55% to 62.85%, as strong employment growth offsets the longer-term declining trend in participation due to demographically-embedded retirements of baby boomers.

✓ *December 2017 participation rate = 62.71%*

+ *January 2018 participation rate = 62.74%*

- **Unemployment rate** should edge down slightly from 4.1% to between 3.5% and 3.9%.

? *January unemployment rate = 4.1%*

- **Hourly wage** growth, reported by BLS for all employees and non-supervisory and production workers, should edge up slightly during 2018 to a range of 2.6% to 3.0%.

✓ *Q4 2017 employment cost index for wages and salaries = 2.61%*

✓ *December 2017 12-month moving average hourly wage rate for non-supervisory and production workers was revised down from 2.35% to 2.33%*

? *January 2018 12-month moving average hourly wage rate for non-supervisory and production workers rose to 2.34%*

✓ *December 2017 12-month moving average hourly wage rate for all employees was revised down from 2.57% to 2.54%*

? *January 2018 12-month moving average hourly wage rate for all employees rose to 2.58%; however, the January 2017 to January 2018 increase was 2.89%, indicating a possible upside breakout in wage growth*

+ *Evercore ISI employee pricing power index (upward pressure above 50; downward pressure below 50): December = 64.8; January = 64.0; February 16 = 67.2*

- *GS's wage tracker declined to 2.1% in December*

- *The Atlanta Federal Reserve wage tracker declined to 2.9% in December, its lowest level in a year*

+ *18 states and 20 cities boosted the minimum wage rate at the beginning of 2018*

- **Nominal consumer disposable income** growth, measured on a Y/Y basis should increase during 2018 because of strong employment growth, rising wage rates and tax cuts; growth should be in a range of 4.0% to 5.0%.

✓ *Disposable income increased 2.9% in 2017*

✓ *Disposable income is forecast to increase 4.3% in 2018*

- **Nominal consumer spending** growth on the Y/Y basis should remain strong during 2018 because of strong employment growth, rising wage rates, tax cuts, easier access to credit and high levels of optimism; growth should be in a range of 3.5% to 4.5%.

✓ *Consumer spending rose 4.5% in 2017*

✓ *Consumer spending is forecast to increase 4.3% in 2018*

? *Auto sales were 17.1 million annualized in January compared to 17.1 million in 2017*

- *January retail sales were weaker than expected and sales growth for November and December were revised down; strong employment growth, rising wage rates, and tax cuts should result in strong retail sales growth in coming months*

- **Consumer confidence** in 2018 should be relatively stable near the cyclically high levels experienced in 2017.

✓ *Reflecting tax cuts and strong stock market gains, consumer confidence rose in January*

- *Conference Board = 123.1 in December 2017; January = 125.4*

- *University of Michigan = 95.9 in December 2017; January = 95.7; February = 99.9*

- *Bloomberg = 53.5 in December 2017; January = 54.6; early February = 57.0*

- *Evercore ISI = 53.8 in December 2017; January = 54.1; February 16 = 55.3*

- **Consumer credit growth** will remain relatively strong during 2018; growth should match or slightly exceed what occurred in 2017.
 - ✓ *Total consumer credit rose 5.4% in 2017; revolving credit rose 6.0% and non-revolving credit rose 5.1%*
 - ? *According to the Federal Reserve's 2017 Q4 Senior Loan Officer Survey, credit standards for consumer and residential real estate loans did not change; demand weakened for auto loans and residential mortgages*
 - *Lenders expect to tighten credit standards for credit card loans in 2018*
- **Household personal saving rate** will rise slightly as growth in disposable income exceeds growth in consumer spending; historically, a good portion of tax cuts has been saved initially rather than being spend; the saving rate should improve to a range of 3.50% to 4.25%.
 - ✓ *The saving rate averaged 4.0% in 2017, but was 2.4% in the month of December*
 - *The revised 2018 average saving rate forecast is 3.4%*
- **Stock prices**, as measured by the S&P 500 average, should be between 10% higher or 10% lower: on the downside reflecting pressure on profits margins from rising labor costs and higher short-term interest rates and, perhaps fading speculative momentum in an overextended market; on the upside reflecting growth friendly fiscal policy; U.S. stock prices are probably overvalued as 2018 commences, but price momentum is strong and appears to be self-reinforcing for a while longer.
 - + *Through February 16, S&P 500 stock prices have increased 2.2%* ✓ *2017 Q4 annualized S&P 500 operating earnings expected to be \$140, up 15% from 2016* **Business activity** will remain strong with both the PMI manufacturing and service indices averaging above 50.
 - + *December manufacturing PMI = 59.3; January = 59.1*
 - + *December services PMI = 56.0; January = 59.9*
 - + *December NFIB optimism index = 104.9; January = 106.9*
 - + *December GS analyst index = 70.0; January = 72.7*
 - *December industrial production = 107.5; January = 107.2*
 - *December capacity utilization = 77.9%; January = 77.5% (80.0% and above typically leads to a sustained acceleration in business investment spending)*
 - ✓ *2017 Q4 manufacturers' survey—94.6% somewhat or very positive about business prospects*
 - + *Auto production is forecast to increase at an annual rate of 19% in Q1 2018*
- **Business investment** inflation-adjusted spending growth should increase because of strong demand and favorable tax incentives; growth in 2018 should be well above the long-term trend level in a range of 4.5% to 5.5%.
 - ✓ *Business investment grew 4.7% in 2017*
 - ✓ *GS 2018 forecast business investment growth = 4.9%*
 - + *GS's capital expenditures tracker has accelerated sharply in the last several months to approximately 9%, reflecting strong global growth and domestic tax cuts; this implies that the risks to GS's business investment spending forecast are to the up side*
 - ✓ *B of A 2018 forecast business investment growth = 6.0%*
 - ✓ *Bill's combined business and residential 2018 investment growth forecast "BASE" scenario = 5.2%; Bill's "STRONG GROWTH" scenario = 5.9%*
 - + *Evercore ISI capital goods index (acceleration above 50; deceleration below 50): December = 61.0; January = 62.0; February 16 = 63.4*

+ *December NFIB net percentage planning to increase capital spending = 27%; January = 29%*
 ? *December NFIB percentage reporting capital outlays = 61%; January = 61%*

- **Business credit** growth should continue to expand near levels experienced in 2018 to expand, but credit spreads should begin to widen; the impact of new tax provisions which will reduce the attractiveness of debt financing is uncertain, but could contribute to a slight slowing in business credit growth.

+ *The January 2018 Federal Reserve Senior Loan Officer Survey, covering 2017 Q4, indicated that credit standards were easier for commercial and industrial loans; demand was unchanged; lenders expect to ease credit standards for commercial and industrial loans in 2018 and also expect demand to strengthen as businesses increase capital expenditures in response to strong economic growth and tax incentives*

- *Credit standards tightened for commercial real estate loans and demand weakened*

- *Lenders expect to tighten credit standards for commercial real estate loans in 2018*

- **Residential housing investment** should be a little stronger in 2018 in a range of 3% to 6%; housing starts should also rise in a range of 3% to 6%.

✓ *2017 residential investment grew = 1.7%*

✓ *GS 2018 forecast investment growth = 4.5%; growth in housing starts = 4.0%*

✓ *B of A 2018 forecast investment growth = 2.8%; growth in housing starts = 5.6%*

? *2017 growth in housing starts = 2.6%; starts up 7.3% in January 2018 over January 2017, 12-month moving average up 0.2% in January (single family up 8.7%; multi-family down -9.8%)*

✓ *Bill's "BASE" scenario 2018 growth in housing starts = -0.3%*

+ *Evercore ISI homebuilder index (expansion above 50; contraction below 50): December = 58.0; January = 58.4; February 16 = 61.7*

- *December NAHB housing index = 74; January = 72; February = 72 (expansion above 50)*

- **Residential housing prices** should rise more slowly in 2018 in a range of 3% to 5%.

✓ *Case-Shiller growth in national housing prices through November 2017 (12-month change) = 6.2%*

✓ *FHFA 2017 Q3 growth in national housing prices (12-month change) = 6.5%*

- **Trade deficit** should rise more rapidly in 2018 in a range of -3.0% to -3.5%.

✓ *December 2017 trade deficit = -2.85%*

- The **dollar's value** on a trade-weighted basis should continue its recent moderate decline due to stronger global economic growth.

✓ *December major country trade-weighted dollar value = 88.75, down -7.0% in 2017*

+ *Trade-weighted dollar declined -4.4% in January*

- **Oil prices** are likely return to the long-term range of \$40 to \$55 that balances global supply and demand because abundant and flexible supply in the U.S. will constrain prices if global demand accelerates; however, strong global growth, OPEC production controls and speculative trading will cause oil prices to exceed this range during much of the year and perhaps for the entire year.

✓ *West Texas crude oil prices per barrel averaged \$58 in December 2017*

- *Oil prices averaged \$64 per barrel in January and \$62 through mid-February*

- **Monetary policy**—the Federal Reserve will raise the federal funds rate three to four times during 2017 in 25 basis point increments.

- ? *The FOMC did not raise rates at its January meeting*
- ✓ *The University of Michigan consumer sentiment survey indicated that Inflation expectations 5-10 years ahead rose from 2.4% in December to 2.5% in January*
- ✓ *The 5-year, 5-year forward inflation expectation rate, which is tied to CPI, was 2.22% on February 15; adjusting for the CPI-CPE inflation differential of approximately 25 basis points translates to 1.97% long-term rate of increase in the PCE inflation rate*
- **Total inflation** measures (CPI and CPE) will rise early in 2018 but then move lower later in the year as the impacts of the recent rise in energy prices falls out of the indices: CPI will rise 1.8% to 2.1% and CPE will rise 1.6% to 1.9%.
 - ✓ *Total CPI rose 2.11% in 2017*
 - + *Total CPI January = 2.15%*
 - ✓ *Total CPE rose 1.70% in 2017*
 - ✓ *GS total CPE forecast for 2018 = 1.7%*
 - ✓ *B of A total CPE revised forecast for 2018 = 1.9%*
 - ✓ *Bill's total CPE forecast "BASE" scenario = 1.9%; Bill's "STRONG GROWTH" scenario = 1.9%*
 - **Core PCE inflation** will rise from 2017's depressed level in a range of 1.7% to 1.9%, reflecting global disinflationary trends offset somewhat by overheating U.S. economic activity and employment.
 - ✓ *Core CPI rose 1.76% in 2017*
 - + *Core CPI January = 1.85%*
 - ✓ *Core CPE rose 1.52% in 2017*
 - ✓ *GS core CPE forecast for 2018 = 1.8%*
 - ✓ *B of A core CPE revised forecast for 2018 = 1.9%*
 - ✓ *Bill's core CPE forecast "BASE" scenario = 1.9%; Bill's "STRONG GROWTH" scenario = 1.9%*
 - The **10-year Treasury rate** is likely to rise somewhat during 2018 and fluctuate during the year in a range between 2.25% and 3.00%. Faster than expected real GDP and employment growth would push the rate toward the top end of the range; greater than expected declines in inflation and/or heightened financial instability would push the rate toward the bottom end of the range.
 - ✓ *The 10-year Treasury Note yield was 2.40% on the last trading day of 2017*
 - + *The 10-year Treasury Note yield was up 47 basis points as of February 16 to 2.87%*
 - **Federal fiscal policy** involving tax cuts and spending increases will have a positive impact on real GDP growth during 2018, raising real GDP growth by approximately 0.3%.
 - ✓ *Federal government investment grew 0.2% in 2017*
 - ✓ *GS 2018 original forecast federal government investment growth = 4.1%; revised = 4.6%*
 - ✓ *GS original combined federal and state and local 2018 investment growth forecast = 1.9%; revised = 2.1%*
 - ✓ *B of A combined federal and state and local 2018 investment growth forecast = 0.8%*
 - ✓ *Bill's combined federal and state and local 2018 investment growth forecast "BASE" scenario = 1.4%; Bill's "STRONG GROWTH" scenario = 1.4%*
 - **State and local investment spending** growth will remain subdued below a growth rate of 1.0%, which will be well below the long-term trend.

✓ *State and local investment grew 0.1% in 2017*

✓ *GS 2018 forecast state and local investment growth = 0.5%*

? *Evercore ISI state tax revenues index (accelerating above 50; decelerating below 50): December = 56.5; January = 58.9; sales taxes, income taxes, and property taxes are all rising*

- The **deficit** as a percentage of nominal GDP will increase from fiscal year 2017's level of 3.41% to a range of 3.75% to 4.25%. Stronger than expected growth would push the deficit toward the lower end of the range. Because the full effects of the "Tax Cuts and Jobs Act" will impact only approximately half of fiscal year 2018, significant negative consequences for the size of the federal deficit will not occur until fiscal 2019.

✓ *GS original fiscal 2018 forecast federal budget deficit = 3.7%; revised = 3.9%*

✓ *B of A original fiscal 2018 forecast federal budget deficit = 3.9%; revised = 4.1%*

✓ *Bill's fiscal 2018 deficit forecast "BASE" scenario = 3.6%; Bill's "STRONG GROWTH" scenario = 3.5%*

✓ *The 12-month budget deficit was 3.45% in December; January = 3.43%*

2. **Rest of the World:—January Assessment:** Global economic activity continued to be very strong in January, led by developed economies and appears to have strengthened a bit further, with strong passthrough benefits to emerging markets; the outlook is for continued strength; however, nearly all economies are growing faster than potential, which is not sustainable over the longer run. 2018 growth forecasts for most countries have been raised.

✓ *GS's global current activity indicator (CAI) was 5.1% December, the highest level in seven years, and moved up to 5.3% in January exceeding potential growth of 3.6%*

✓ *CAI for major advanced economies accelerated from 1.5% in mid-2017 to 3.8% in December; it slipped slightly to 3.6% in January, but still exceeded potential growth of 1.3%*

✓ *CAI for emerging markets accelerated from 4.3% at the beginning of 2017 to 6.2% in December; it rose further in January to 6.7%, which exceeded potential growth of 5.4%*

✓ *B of A's Global cycle indicator was unchanged in December, with improvement in emerging markets (Brazil, Turkey, Poland, China) offset by some slowing in developed markets*

✓ *OECD's global index of leading economic indicators continued to rise in January*

✓ *The JP Morgan Global Manufacturing PMI was 54.5 in December which was the highest level since February 2011 during the initial recovery from the Great Recession; this index edged down to 54.4 in January*

- **Global growth** is likely to improve to 3.8% in 2018 from 3.7% in 2017. This is a considerable improvement from slower growth in recent years. Global economic momentum built in the last few months of 2017 and this should carry over into 2018. However, downside risks, such as U.S. trade policies and an emerging global monetary tightening cycle, and, of course the low probability risks of significant eruption of political turmoil in the Middle East and Korea, are lurking in the background. These risks are not expected to dampen growth momentum in 2018, but prudence argues for monitoring them closely.

+ *Global growth was in a range of 3.7% (IMF) to 3.8% (B of A) in 2017; forecasts for 2018 have been raised: 3.9% (B of A and IMF), 4.1% (GS)*

- **Global inflation** is expected to rise from 2.7% in 2017 to 3.0% in 2018, reflecting strong economic growth and shrinking or closed output gaps.
+ Global inflation was in a range of 2.8% (B of A) to 3.1% (IMF) in 2017; the forecast for 2018 has been raised to a range of 3.1% (B of A) to 3.3% (IMF)
- **European growth** will be positive but will slow to 1.4% (GS) to 2.0% (B of A) from 2017's stronger than expect pace. The potential for tighter monetary policy poses downside risk to growth
*? 2017 Euro area growth = 2.3%; GS revised it's 2018 forecast to 2.2%; B of A remains at 2.0%
 + Euro Area CAI = 4.1% in January*
- **European total inflation** in 2018 will remain stable at 1.5%, the same level as in 2017, but **core inflation** will rise from 0.9% to 1.1%; both measures will remain considerably below the ECB's 2.0% target.
*✓ 2017 total inflation = 1.5%; 2018 forecast remains at 1.5%
 ✓ 2017 core inflation = 1.0%; 2018 forecast has been revised down to 0.9%*
- **European financial markets** should be relatively stable, as long as economic growth remains solid; some volatility could occur depending upon the outcome of the Italian elections.
? Volatility has increased in concert with U.S. stock market volatility; interest have also begun to rise, which, if sustained, will impede the impact of the ECB's monetary policy intended to raise the inflation rate
- **European political dysfunction, populism and nationalism** should remain quiescent during 2018 as long as economic growth remains relatively strong. Countries to watch closely, however, Italy and Greece.
✓ Italian parliamentary elections are scheduled for March 4; a euro-skeptic government coalition could emerge
- **U.K. growth** is expected to decline to 1.0% to 1.1% in 2018 compared to 1.5% to 1.7% in 2017 as the consequences of Brexit develop.
*✓ 2017 growth is expected to be in a range of 1.5% to 1.8%
 ✓ 2018 growth forecasts have been revised higher: GS = 1.3%; B of A = 1.2%; potential growth = 1.3%
 + U.K. CAI = 1.5% in January
 ✓ 2017 total inflation = 2.3%; 2018 forecast = 1.8%
 ✓ 2017 core inflation = 2.4%; forecast = 2.2%*
- **China's GDP growth** is expected to be in a range of 6.3% (GS) to 6.6% (B of A) but risks are to the downside as President Xi emphasizes the goal of a "better quality life" over GDP growth.
*✓ 2017 growth is expected to be in a range of 6.6% (B of A) to 6.9% (GS)
 ✓ 2018 growth forecasts have been revised higher: GS = 6.5%; B of A remains at 6.6%; potential growth = 6.6%
 + China's CAI = 7.3% in January*
- **China's leadership** will continue implement **economic reforms** gradually; financial and political stability will be maintained.
✓ Financial market regulation has curtailed growth in risky wealth management products

- **Japan's** economic policies will continue to fall short of achieving the 2.0% inflation target; total inflation is expected to rise from 0.5% in 2017 to 1.0% in 2018; core inflation is expected to rise from 0.4% in 2017 to 0.6% in 2018. GDP growth will also continue to fall short of the policy target; implementation of market reforms will continue to weigh heavily on both growth and inflation.

✓ 2017 growth is expected to be in a range of 1.6% (B of A) to 1.8% (GS)

✓ 2018 growth forecasts = 1.6% (B of A); 1.7% (GS); potential growth = 1.0%

+ Japan's CAI = 3.2% in January

✓ 2017 total inflation = 0.5%

✓ 2018 revised forecast total inflation = 1.3% (B of A) vs. 1.0%

✓ 2017 core inflation = 0.5%

✓ 2018 revised forecast core inflation = 1.0% (GS) vs. 0.6%

- **India** should continue to experience relatively strong real GDP growth in a range of to 7.0% to 8.0% in 2018.

✓ 2017 growth = 6.2%

✓ 2018 forecast growth = 7.6%; potential growth = 7.1%

+ India's CAI = 8.7% in January

- **Emerging market countries, excluding China**, should experience better growth in 2018 than in 2017. Growth is expected to improve from 3.6% in 2017 to 3.9% in 2018.

✓ 2017 growth = 3.7%

✓ 2018 revised forecast growth = 4.0%

- **Brazil and Russia** will benefit from higher oil prices; Russian growth is expected to improve from 2.6% in 2017 to 3.0% in 2018; Brazilian growth is expected to improve from 0.6/1.0% in 2017 to 2.6% in 2018.

✓ Brazil and Russia are benefiting from higher commodity and oil prices

✓ Brazil's 2017 growth is expected to be in a range of 1.0% (B of A) to 1.1% (GS)

✓ Brazil's 2018 revised forecast growth is expected to be in a revised range of 2.7% (B of A) to 3.0% (GS); potential growth = 2.4%

+ Brazil's CAI = 4.6% in January

✓ Russia's 2017 growth = 2.1%

✓ Russia's 2018 revised forecast growth = 3.3%; potential growth = 3.3%

+ Russia's CAI = 5.0% in January

- Although the rise in oil prices might save **Venezuela** from default and bankruptcy in 2018, this seems to be the likely outcome.

? *Economic conditions continue to deteriorate*

3. Risks—stated in the negative relative to the forecast.

- **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

✓ *Too soon to evaluate; however, momentum at the beginning of the year has been very strong*

- **U.S. productivity** falls below the bottom end of the 1.3% to 1.5% range

✓ *First opportunity to evaluate will not occur until April*

- ***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
+ Employment growth was very strong in January
- ***Employment participation rate*** falls below the bottom of the forecast range rather than remaining relatively stable or rising modestly
- Risk not realized
- ***U.S. hourly wage rate growth*** is lower or higher than the forecast range of 2.6% to 3.0%; falling wage growth is the more serious risk
- Risk not realized
- ***U.S. unemployment rate*** rises above the forecast range or falls below it
- Risk not realized
- ***Nominal U.S. consumer disposable income*** increases less or more than expected; a less than expected increase is the more serious risk
✓ Too soon to evaluate
- ***Nominal U.S. consumer spending*** increases less or more than expected; a less than expected increase is the more serious risk
✓ Too soon to evaluate
- ***U.S. stock prices*** fall more than or rise more than the expected range of -10% to +10%
- Risk not realized
- ***U.S. business activity*** contracts or expands more than expected; contraction is the more serious risk
✓ Too soon to evaluate
- ***U.S. private business investment*** does not improve as much as or more than expected; falling short of expectations is the more serious risk
✓ Too soon to evaluate
- ***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
✓ Too soon to evaluate
- ***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
✓ Too soon to evaluate
- ***U.S. trade deficit*** does not widen as much as expected
- Risk not realized
- ***Value of the dollar*** rises rather than falling as expected and triggers a global dollar squeeze
- Risk not realized
- ***Oil prices*** rise above or fall below the expected range; high oil prices is the greater concern because it would be indicative of unsustainable price speculation
+ Risk realized, but prices could fall later in the year
- ***U.S. monetary policy*** tightens more than 75 to 100 basis points, spawns financial market uncertainty and contributes to global financial instability

- ✓ *Too soon to evaluate*
- **Financial conditions** tighten and cause financial market volatility
 - *Risk not realized*
- **U.S. inflation** falls or rises more than expected
 - ✓ *Too soon to evaluate*
- **U.S. long-term interest rates** fall or rise more than expected
 - *Risk not realized*
- **U.S. fiscal policy** is more expansionary than expected due to larger than expected increases in spending
 - + *Risk realized; Congress increased spending caps*
- **Federal budget deficit** increases more than expected
 - ✓ *Too soon to evaluate*
- **U.S. state and local spending** does not rise as fast as expected
 - ✓ *Too soon to evaluate*
- **Global GDP growth** does not rise as fast as expected
 - ✓ *Too soon to evaluate*
- **Global trade** declines as the U.S. and other countries pursue protectionist policies
 - ✓ *Too soon to evaluate*
- **European growth** is considerably less than expected
 - ✓ *Too soon to evaluate*
- **ECB's** quantitative easing program is not successful in raising inflation
 - ✓ *Too soon to evaluate*
- **Europe**—financial market turmoil reemerges
 - *Risk not realized*
- **Europe**—political instability and social unrest rises more than expected threatening survival of the Eurozone and the European Union
 - *Risk not realized*
- **Chinese** leaders have difficulty implementing *economic reforms*
 - ✓ *Too soon to evaluate*
- **China's growth** slows more than expected
 - ✓ *Too soon to evaluate*
- **Japan**—Abenomics and monetary policy are unsuccessful in raising inflation to the 2 percent target
 - ✓ *Too soon to evaluate*
- **Emerging economies**—a strong dollar leads to serious difficulties especially for countries with large amounts of dollar-denominated debt.
 - ✓ *Too soon to evaluate*
- Severe and, of course, unexpected **natural disasters** occur, which negatively impact global growth
 - *Risk not realized*
- Political instability in the **Middle East** causes a spike in oil prices

- *Risk not realized, but Israel-Iran hostilities narrowly avoided*
- **North Korea** threatens global political stability and potential nuclear war by persisting in testing nuclear devices and intercontinental ballistic missiles
 - *Risk not realized*

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