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The Longbrake Letter* Assessment of the 2018 Outlook

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May Outlook Summary: Above potential economic growth continues to be a global theme as global and world economies are finally benefiting from years of easy monetary policy. Momentum is powerful and is currently self-reinforcing. Practically all economies are growing above potential and slack has already disappeared or is disappearing rapidly. Recent U.S. and global data have been a bit softer than expected, which might mean that acceleration in momentum is waning.

In the case of the U.S., unemployment is significantly below the natural rate, but, according to the Congressional Budget Office, a small amount of slack remained in overall economic potential output at the beginning of 2018. 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 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 above full capacity, eventually leads to recession and correction of the imbalances that built up during the euphoric period of strong growth. Recession risks will escalate by 2020. Whether recession occurs within that time frame will depend upon how rapidly and how much the Federal Reserve raises interest rates. But, it will also depend upon future

* *The information contained in this newsletter does not constitute legal advice. This newsletter is intended for educational and informational purposes only.*

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political and market developments which are difficult to foresee from the present with any degree of certainty.

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 began 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 reliable forecast lead times have been very short. What we know from experience is that recessions occur when the economy becomes overheated and the Fed is tightening. 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, often for longer than seems possible.

1. **U.S. – May Assessment:** U.S. stock markets took off like a rocket blasting off in **January**. 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, potential increases in inflation, but perhaps most importantly, a short squeeze on inverse volatility products, clobbered the stock market and by the end of February the S&P 500 average was up only 1.5 percent, while 10-year Treasury bond yields continued to rise to 2.87 percent.

As **March** began, fears of a bear market in stocks subsided, but volatility remained elevated. Importantly, however, confidence was not adversely affected by increased volatility. Indeed, consumer and business confidence remains ebullient and moved higher to levels reminiscent of the late 1990s during the technology boom.

During **April** and **early May**, volatility ebbed a little bit in the stock market and the 10-year Treasury rate continued its upward crawl, flirting with 3.00 percent. Q1 real GDP was weak, but stronger than expected. Forecasters remain very confident that GDP growth in 2018 will be very strong and well above potential. Inflation was a little stronger than originally expected in Q1 2018. Both the manufacturing and services purchasing managers indices turned down slightly in April, but are still at cyclically high levels.

- ✓ **Small businesses cited the quality of labor as the single most important concern for the fourth consecutive month**
- ✓ **Perhaps signaling that growth may be poised to slow, 27% of small businesses said that this is a “good time to expand” in April compared to the all-time high of 32% in February**
- ✓ **Consumer spending should rebound in Q2 from Q1’s depressed level, but debit card spending data was weaker than expected in April and growth in credit card debt has slowed since the beginning of the year**
- ✓ **The Chicago Federal Reserve’s National Activity Index has been positive but volatile from month to month so far in 2018: December = .14, January = .02, February = .98, March = .10 (an index value greater than zero indicates that economic activity is accelerating); the three-month average was 0.16 in January, 0.31 in February, and .27 in March, suggesting modest acceleration**
- ✓ **The Conference Board’s index of leading economic indicators rose 0.3% in March to 109.0, following increases of 0.7% in February following increases of 0.8% in January, 0.7% in December, 0.4% in**

November and 1.3% in October, reflecting considerable upward momentum in the U.S. economy

- ✓ **93.5% of manufacturers feel positive about the outlook for their companies; this is the second highest level in the 20-year history of this survey – the all-time high of 94.6% was recorded in Q4 2017**
 - ✓ **On a negative note, turmoil in the White House and changes in Trump Administration leadership, could erode market confidence in the sustainability of economic growth; concerns are being voiced about the possibility of a debilitating trade war and risks entailed in President Trump’s decision to negotiate personally with North Korea**
 - ✓ **One of B of A’s recession probability indicators is signaling a 25% probability that a recession will occur within the next 12 months compared to 10% a year ago, but another indicator says the probability is zero**
- **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 2.7% to 3.0% compared to the original forecast range of 2.3% to 2.8%**
 - + **Q1 2018 real GDP grew 2.3% in the first quarter, above expectations**
 - ✓ **Although GS’s U.S. Current Activity Indicator (CAI) declined in March and further in April but bounced back in early May; it remains above GS’s forecast real GDP growth of 2.88% in 2018 and well above GS’s long-term potential level of 1.75%: December CAI = 4.0%; January = 3.7%; February = 4.5%; March = 3.6%; April 3.1%; preliminary May = 3.6%; CAI is a proxy for real GDP growth**
 - ✓ **B of A’s revised 2018 forecast is 2.95% and GS’s is 2.88%; my revised “BASE” scenario forecast is 2.69% and my “Strong Growth” scenario is 2.74%**
 - ✓ **FOMC’s revised 2018 Q4/Q4 central tendency range is 2.6%-3.0%; the range of this projection was raised by 0.4% at the March FOMC meeting**

- **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.)
 - ✓ **CBO revised potential real GDP assumptions in April and increased its estimate of the Q4 2017 output gap to -0.72%**
 - ✓ **Based upon CBO's estimate of potential real GDP and Q4 2017 real GDP, the output gap at the end of 2017 was -0.7% rather than 0.0%, which revises the original forecast range from 0.7% to 1.1% to 0.0% to 0.4%**
 - + **My revised 2018 forecast output gap is 0.2% to 0.3%, indicating an economy operating slightly above full capacity**
 - ? **Q1 2018 output gap = -.45%**
- **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%.
 - ✓ **CBO revised its assumptions in April and increased its estimate of potential real GDP in 2017 from 1.54% to 1.65% and its 2018 estimate from 1.66% to 1.87%**
 - + **My estimate of potential growth during 2018 remains in a range of 1.5% to 1.7%, but my long-term range has edged up 0.1% to 1.8% to 2.0%, which is the same as the FOMC's projection**
- **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 1.31 Y/Y in 2017 (1.23% Q4/Q4)**
 - + **Productivity was 1.35 Y/Y in Q1 2018 (1.35% Q1/Q1)**
 - + **the 2018 forecast remains in a range of 1.3% to 1.5% 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 which 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**
 - **Payroll employment increased an average of 199,750 monthly over the first four months of 2018**

- Household employment increased an average of 290,000 monthly over the first four months of 2018
- Conference Board's difference between jobs plentiful and hard to get edged down to 22.9% in April, after widening to 23.8 in March and 24.7% in February from 20.9% in January and 20.3% in December
- Evercore ISI employee placement (average of temporary and permanent) index is very strong and rising (upward pressure above 50; downward pressure below 50): December = 55.4; January = 54.9; February = 57.5; March and April = 59.0; May 18th = 60.6
- **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%; February soared to 63.02%; March was a still high 62.92%, which is why the unemployment rate had not fallen even though employment growth was exceptionally strong; but April fell to 62.78%, which is why the unemployment rate fell in April
- **Unemployment rate** should edge down slightly from 4.1% to between 3.5% and 3.9%.
 - + January unemployment rate = 4.1%; February = 4.1%; March = 4.1%; April = 3.9%
- **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 (ECI) for wages and salaries = 2.61%
 - + Q1 2018 ECI = 2.74%
 - ✓ December 2017 12-month moving average hourly wage rate for non-supervisory and production workers was revised down from 2.35% to 2.33%
 - 12-month moving average hourly wage rate for non-supervisory and production workers is edging up, but remains well short of the forecast range: January = 2.34%; February = 2.35%; March = 2.38%; April = 2.41%
 - ✓ December 2017 12-month moving average hourly wage rate for all employees was revised down from 2.57% to 2.54%
 - ? 12-month moving average hourly wage rate for all employees is stable: January = 2.57%; February = 2.56%; March = 2.57%; April = 2.57%

- + Evercore ISI employee pricing power (average of temporary and permanent workers) index has been very strong and rising (upward pressure above 50; downward pressure below 50) and edging up: December = 64.8; January = 64.0; February = 67.2; March = 67.1; April = 66.8; May 18th = 67.8
- + GS's wage tracker rose to 2.5% in March and 2.6% in April from 2.1% in December
- ? The Atlanta Federal Reserve wage tracker declined to 2.9% in December, its lowest level in a year; January = 3.0%; February = 2.9%; March = 3.3%
- + 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 rose 3.2% Y/Y through March
 - + Disposable income is forecast to increase 4.5% 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 4.6% in 2017
 - + Consumer spending rose 4.5% Y/Y through March
 - Consumer spending is forecast to increase 4.6% in 2018
 - + Auto sales were 17.2 million in 2017; 17.1 million annualized in January; 17.0 million in February; 17.4 million in March (boosted artificially by day count); 17.1 million in April (B of A expects auto sales to decrease from a high of 17.5 million in 2016 to 13.0 million in 2021); the quarterly average Y/Y growth rate rose from -0.4% in December to 0.8% in April
 - 2018 Q1 retail sales were weak but were revised higher in April to quarterly growth of 0.5% (March was revised from 0.6% to 0.7%, February was revised from -0.1% to 0.0%, and January was -0.2% -- Q1 weakness was probably temporary due to delayed tax refunds); April retail sales rose a greater than expected 0.4%; the quarterly average Y/Y growth rate fell from 5.7% in December to 4.8% in April; strong employment growth, rising wage rates, and tax cuts should result in stronger 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 has continued to rise over the first four months of 2018**
 - **Conference Board = 123.1 in December 2017; January = 124.3; February = 130.0 (18-year high); March = 127.0; April = 128.7**
 - **University of Michigan = 95.9 in December 2017; January = 95.7; February = 99.7; March = 101.4 (14-year high); April = 98.8; May = 98.8**
 - **Bloomberg = 53.5 in December 2017; January = 54.6; February = 56.2; March = 56.8; April 14th = 58.1 (17-year high)**
 - **Evercore ISI = 53.8 in December 2017 and has been edging up in 2018: January = 54.1; February = 55.4; March = 55.8; April = 56.2; May 18th = 56.4**
- **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; credit growth slowed during Q1 2018, driven by substantial deceleration in revolving credit growth: January = 5.4%; February = 5.2%; March = 5.0%**
 - **Revolving credit rose 5.9% in 2017; January = 6.0%; February = 5.4%; March = 4.8%**
 - + **Non-revolving credit rose 4.9% in 2017; January = 4.9%; February = 4.9%; March = 5.1%**
 - ✓ **Delinquency rates on auto loans have been trending higher since 2016**
 - ? **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 3.4% in 2017, but was 2.4% in the month of December**
 - **January saving rate = 3.0%; February = 3.3%; March = 3.1%; 12-month average = 3.2%**
 - **The 2018 average saving rate forecast is 3.3%**

- **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 May 18th, S&P 500 stock prices have increased 1.5% during 2018**
 - ✓ **2017 Q4 annualized S&P 500 operating earnings = \$135, up 21% from 2016; 2018 Q1 earnings are expected to be up 37% from a year ago to \$158, propelled by a cut in the federal corporate income rate from 35% to 21%, which has added \$9 to \$10; 2018 Q2 earnings are likely to exceed \$160**
- **Business activity** will remain strong with both the PMI manufacturing and service indices averaging above 50.
 - + **December manufacturing PMI = 59.3; the index has remained strong in 2018, but weakened a little in April: January = 59.1; February = 60.8 (highest level since May 2004); March = 59.3; April = 57.3**
 - + **December services PMI = 56.0; this index was very strong at the beginning of the year, but weakened a little in April: January = 59.9; February = 59.5; March = 58.8; April = 56.8**
 - + **December NFIB optimism index = 104.9; the index has been relatively stable in 2018 at a high level: January = 106.9; February = 107.6 (all-time high was 108.0 in 1983); March = 104.7; April = 104.8**
 - + **December GS analyst index = 70.0; the index was relatively stable during the first three months of 2018, but fell sharply in April: January = 72.7; February 68.0; March = 70.4; April = 60.0**
 - + **Industrial production was 105.7 in December; it has strengthened in 2018: January = 105.3; February = 105.8; March = 106.5; April = 107.3**
 - **December capacity utilization = 77.3%; January = 76.9%; February = 77.1%; March = 77.6%; April = 78.0% (80.0% and above typically leads to a sustained acceleration in business investment spending)**
 - ✓ **2018 Q1 manufacturers' survey = 93.5% somewhat or very positive about business prospects; Q4 2017 = 94.6% (highest in 20-year history of the survey)**
 - + **Manufacturing employment has increased an average of 26,571 monthly over the past 7 months; employers report increasing difficulty in finding skilled workers**

- + Auto production increased 20% Q1 2018 compared to Q4 2017, but is forecast to decline 6% in Q2 2018
- + Spurred by tax cuts, the Duke CFO Optimism Index rose to an all-time high of 71.2 in February
- **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
 - + Business investment grew at annual rate of 4.6% in Q1 2018
 - ✓ Original GS 2018 business investment growth forecast = 4.5%; revised = 5.3%
 - + 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
 - ✓ Original B of A 2018 business investment growth forecast = 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) was 61.0 in December; it has gotten stronger during 2018: January = 62.0; February = 64.7; March = 66.3; April = 67.9; May 18th = 67.9
 - + December NFIB net percentage planning to increase capital spending = 27%; plans have edged up slightly in 2018: January = 29%; February = 29%; March = 26%; April = 29%
 - + December NFIB percentage reporting capital outlays = 61%; actual outlays have been stable: January = 61%; February = 66%; March = 58%; April = 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**
- ? **Growth in total bank loans slowed to an annual rate of growth of 3.7% in February**
- **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 = 1.8%**
 - **Residential investment growth was 0.0% in Q1 2018**
 - ✓ **Original GS 2018 forecast investment growth = 4.2%; revised forecast = 3.0%**
 - ✓ **Original B of A 2018 forecast investment growth = 2.2%; revised = 2.5%; growth in housing starts = 5.6%**
 - ✓ **Original GS 2018 forecast housing starts growth = 4.0%; revised = 5.4%**
 - ✓ **Original B of A 2018 forecast housing starts growth = 5.6%; revised = 5.5%**
 - ? **2017 growth in housing starts = 2.8%; starts up 7.6% over first four months of 2018 compared to first four months of 2017, 12-month moving average up 3.5% in April (single family up 9.3%; multi-family down -7.9%)**
 - ✓ **Bill's "BASE" scenario 2018 growth in housing starts = 1.9%**
 - + **Evercore ISI homebuilder index (expansion above 50; contraction below 50) was 58.0 in December; it has strengthened in 2018: January = 58.4; February = 61.3; March = 61.9; April = 62.2; May 18th = 62.0**
 - **NAHB housing index was 74 in December; it has weakened slightly so far in 2018: January = 72; February = 71; March = 70; April = 68; May = 70 (expansion above 50)**
 - **New household formation fell from 1.44 million in 2017 Q4 to 1.06 million in 2018 Q1; new household formation has average a relatively weak annual growth of 1.01 million over the past 20 quarters**
 - + **The University of Michigan consumer survey found that a net 15.0% felt in April that this is a good time to buy a home; this is the highest percentage in several decades and reflects high levels of consumer optimism generally; however, this optimism is not passing through to new home construction or higher home sales**
- **Residential housing prices** should rise more slowly in 2018 in a range of 3% to 5%.

- **Case-Shiller growth in national housing prices has not slowed through February 2018: (12-month change) = 6.3% compared to 6.3% in 2017**
- ✓ **FHFA 2017 Q4 growth in national housing prices (12-month change) = 6.7%**
- ✓ **FHFA housing price index was 10.6% above its long-term trend in Q4 2017 compared to a trough of -8.3% below trend in Q1 2012**
- **Trade deficit** should rise more rapidly in 2018 in a range of -3.0% to -3.5%.
? **December 2017 trade deficit = -2.88%; January = -2.89%; February = 2.95%; March -2.98%**
- 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 YTD -2.7% in January; YTD -3.4% in February; YTD -2.8% in March; YTD in April -2.7%**
- **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 (January); \$62 (February); \$63 (March); \$66 (April); \$70 (early May); \$64.71 YTD through May 18th**
- **Monetary policy** – the Federal Reserve will raise the federal funds rate three to four times during 2017 in 25 basis point increments.
+ **As expected, the FOMC raised rates 25 basis points at its March 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, February, March and April**
✓ **The 5-year, 5-year forward inflation expectation rate, which is tied to CPI, was 2.16% on May 17th; adjusting for the CPI-CPE inflation differential of approximately 25 basis points translates to 1.91% 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 2.10% in 2017**
- **Total CPI January = 2.14%; February = 2.26%; March = 2.36%; April = 2.43%**
- ✓ **Total CPE rose 1.71% in 2017**
- + **Total CPE January = 1.67%; February = 1.75%; March = 2.01%**
- **GS total CPE original forecast for 2018 = 1.7%; revised = 2.3%**
- **B of A total CPE original forecast for 2018 = 1.9%; revised forecast = 2.0%**
- **Bill's original total CPE forecast "BASE" scenario = 1.9%; revised = 2.3%; Bill's original "STRONG GROWTH" scenario = 1.9%; revised = 2.3%**
- **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 1.75% in 2017**
 - ✓ **Core CPI January = 1.85%; February = 1.86%; March = 2.11%; April = 2.12%, but was weaker than expected**
 - ✓ **Core CPE rose 1.52% in 2017**
 - + **Core CPE January = 1.53%; February = 1.60%; March = 1.88%; April forecast = 1.85%**
 - ✓ **Original GS core CPE forecast for 2018 = 1.7%; revised = 2.1%**
 - ✓ **Original B of A core CPE forecast for 2018 = 1.9%; revised forecast for 2018 = 2.0%**
 - ✓ **Bill's original core CPE 2018 forecasts for "BASE" and "STRONG GROWTH" scenarios = 1.9%; revised core CPE forecast for "BASE" and "STRONG GROWTH" scenarios = 2.1%**
- 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 66 basis points as of May 18th to 3.06%**
- **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%.

- ✓ Tax cuts and spending increases are expected to raise the level of GDP by 0.9% over 2018 and 2019, with more of the increase occurring in 2019
- ✓ Federal government investment grew 0.2% in 2017
- ? Federal government investment grew at an annual rate of 1.7% in Q1 2018
- ✓ GS 2018 original forecast federal government investment growth = 4.1%; revised = 3.6%
- ✓ GS original combined federal and state and local 2018 investment growth forecast = 1.9%; revised = 2.0%
- ✓ B of A original combined federal and state and local 2018 investment growth forecast = 0.8%; revised = 1.9%
- ✓ Bill's original combined federal and state and local 2018 investment growth forecast "BASE" and "STRONG GROWTH" scenarios = 1.4%; revised = 1.5%
- **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
 - + State and local investment grew at an annual rate of 0.8% in Q1 2018
 - ✓ GS's original 2018 forecast state and local investment growth = 0.6%; revised = 1.0%
 - ? Evercore ISI state tax revenues index growing in 2018 except for February and March (accelerating above 50; decelerating below 50): December = 56.5; January = 58.8; February = 50.3; **March = 49.8**; April = 59.6
- 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 = 4.1%
 - ✓ B of A original fiscal 2018 forecast federal budget deficit = 3.9%; revised = 4.1%
 - ✓ Bill's original fiscal 2018 deficit forecast "BASE" and "STRONG GROWTH" scenarios = 3.6%; revised = 3.9%
 - ? The 12-month budget deficit was 3.45% in December; January = 3.42%; February = 3.54%; March = 3.70%; April = 3.50%

2. **Rest of the World: May Assessment:** Global economic activity continued to be very strong in the first quarter of 2018, led by developed economies 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. Recent data reports have been slightly softer than expected, perhaps indicating deceleration in growth is imminent.
- ✓ **GS's global current activity indicator (CAI) was 5.1% December, the highest level in seven years, and moved up to 5.2% in both January and February, but fell to 4.6% in March and 4.7% in April; however, all recent readings have exceeded potential global growth of 3.5%**
 - ✓ **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, rebounded to 3.9% in February, and fell to 3.0% in March and 2.9% in April – all of which greatly exceed potential growth of 1.3% -- this is not sustainable in the long run, but positive feedback loops are likely to sustain momentum for the next one to two years**
 - ✓ **CAI for emerging markets accelerated from 4.3% at the beginning of 2017 to 6.2% in December and 6.7% in January; but then eased to 6.5% in February, 6.0% in March and 6.2% in April, all of which exceed potential growth of 5.4%**
 - ✓ **OECD's global index of leading economic indicators continued to rise gradually in January, February, March and April**
 - ✓ **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, 54.1 in February, 53.3 in March and 53.5 in April, signaling a gradual loss of momentum in global manufacturing activity**
- **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% (IMF), 4.0% (B of A) and 4.1% (GS)**
- ✓ **Global economic momentum built in the last few months of 2017 and this has carried over into 2018. As recent data reports suggest, it will be difficult to sustain growth at this high level.**
- **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 3.2% (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 = 2.5%; GS revised it's 2018 forecast to 2.3%; B of A revised its 2018 forecast to 2.4%**
 - + **Euro Area CAI has slowed considerably in 2018: January = 4.1%; February = 3.7%; March = 2.9%; April = 2.7%, compared to potential growth of 1.9%; this slowing is consistent with the decline of the Citi European Surprise Index into deeply negative territory**
- **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 has edged up to 1.6% (B of A)**
 - + **2017 core inflation = 1.0%; 2018 forecast is 1.0%**
- **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 rates have also begun to rise, which, if sustained, will impede the impact of the ECB's monetary policy intended to raise the inflation rate**
 - ✓ **The ECB dropped its easing bias for monetary policy; however, QE is expected to continue through December, with tapering occurring from September to December**
 - **European stock markets have had rough going in early 2018; MSCI EMU index is now below its 200-day moving average; the boost from faster European growth, which may have peaked, has been more than offset by the stronger euro and the return of political risk**

following the inconclusive Italian election; however, small and mid-market equities, which have less exposure to the value of the euro, have been outperforming

- ? **Although the Italian elections resulted in populist and fringe parties gaining at the expense of centrist parties, no single party received enough seats to control the formation of the next government; this was a modest negative for financial markets because big changes are unlikely to occur in Italian policy near term with respect to the euro or the European Union; the Italian debt problem will probably continue to slumber, as long as European growth remains strong**
- ***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 decimated centrist parties; however, the muddled nature of the outcome, with no single party emerging in a dominant position, means that there will be no dramatic policy changes – the Italian threat to the European Union will remain muted as long as European growth remains strong and monetary policy continues to be accommodative; however, Italy’s economic underperformance and its debt problem remain and are not expected to improve – the day of reckoning has been postponed, not eliminated**
 - ✓ **There are three possible scenarios to resolve Italy’s political impasse: (1) a new coalition government formed by the left-populist Five Star and right-populist Lega (Berlusconi), the two parties released a jointly-drafted “Contract for a Government of Change;” (2) an interim technocratic government; (3) new elections; the most troubling scenario is the first one, which now appears to be the most likely one, because the two populist parties share a militant Euroskepticism and reject EU-mandated spending controls**
- + **Even though centrist parties emerged from last year’s German elections greatly weakened, the resulting Grand Coalition government, forged by the Christian Democrats and the Social Democratic Party, will maintain a steady policy course, which will involve a shift from fiscal austerity to modest stimulus**
- ***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 was 1.8%**

- **2018 growth forecasts have been revised higher as the U.K. benefits from strong global economic growth: GS = 1.7%; B of A = 1.1%; potential growth = 1.4%**
- **U.K. CAI = 1.5% in January; February = 2.0%; March = 0.8%; April = 1.3%**
- ✓ **2017 total inflation = 2.7% (B of A); 2018 forecast revised higher to 2.2% (B of A)**
- ✓ **2017 core inflation = 2.4% (GS); 2018 forecast = 2.2% (GS)**
- **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 6.9% (B of A and GS)**
 - + **2018 growth forecasts have been revised higher: GS = 6.6%; B of A remains at 6.6%; potential growth = 6.5%; China's official 2018 growth target = 6.5%**
 - ? **Data released so far in 2018 Q1 are a bit weaker than expected, including slower growth in fixed asset investment and a decline in property sales offset by stronger growth in real estate investment; however, 2018 Q1 Y/Y growth was above expectations at 6.8%**
 - + **China's CAI = 7.3% in January; February = 7.2%; March = 6.7%; April = 7.6%**
 - ✓ **Overall, China's growth is slowing very gradually, which is consistent with a maturing economy and, thus, is not a matter of concern**
- **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; the short-term negative consequences for slower credit and economic growth have been offset through easier monetary policy**
 - + **Political stability has been assured by the elimination of presidential term limits and President Xi's reorganization of government ministries to expedite implementation of his policy agenda for environmental protection, financial risk control, and poverty alleviation**
- **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 = 1.7%
- + 2018 growth forecasts = 1.6% (B of A); original = 1.7%, revised = 1.3% (GS); potential growth = 0.9%
- **Contrary to forecasts and CAI, Japan's 2018 Q1 GDP was -0.6%, much worse than the forecast -0.1%; weak consumer and capital spending contributed to the surprise negative growth; however, employment has grown 3.0% over the past year and wages have grown 2.1%, which bodes well for stronger consumer spending in coming quarters**
- + Japan's CAI = 3.2% in January; February = 3.5%; March = 2.5%; April 3.7%
- ✓ 2017 total inflation = 0.5% (B of A)
- + 2018 revised forecast total inflation = 1.1% (B of A) vs. original 1.0%
- ✓ 2017 core inflation = 0.5% (GS)
- + 2018 revised forecast core inflation = 0.9% (GS) vs. 0.6% original
- + Japan appears to have emerged at long last from its deflation trap; wages are rising, albeit slowly, women participation in the labor force is rising; and labor reforms to cut the length of the work week are taking hold
- ? The 10% decline in stock prices in early 2018, which reflected the strengthening of the yen, has not dented business confidence
- **India** should continue to experience relatively strong real GDP growth in a range of to 7.0% to 8.0% in 2018.
 - ✓ 2017 growth = 6.4% (GS)
 - ✓ 2018 forecast growth = 7.6% original, 7.5% revised (GS); potential growth = 7.0%
 - **As reflected by GS's CAI, India's economy appears to be losing momentum: CAI = 8.7% in January; February = 7.6%; March = 8.0%; April 7.1%**
- **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 = 3.8%, revised up from preliminary estimate of 3.6%
 - + 2018 revised forecast growth = 4.0%
 - ? Argentina's and Turkey's financial and currency markets have performed poorly so far in 2018, which could be symptomatic of broader weakness in the structure of global financial markets; decreasing global dollar liquidity, as the Federal Reserve tightens monetary policy, could trigger an escalation in emerging market

countries financial markets which are especially reliant on dollar funding

- ***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 was 1.0%**
 - + **Brazil's 2018 revised 2018 forecast growth is expected to be in a revised range of 3.0% (B of A) to 2.5% (GS); potential growth = 2.2%**
 - + **Brazil's CAI = 4.6% in January; February = 4.7%; March = 3.9%; April = 4.5%**
 - ✓ **Russia's 2017 growth = 1.5% (GS), revised down considerably from preliminary estimate**
 - **Russia's 2018 revised forecast growth = 2.0%; potential growth = 3.3%**
 - **Russia's economy is losing momentum in 2018 despite higher oil prices: Russia's CAI = 5.0% in January; February = 3.5%; March = 2.7%; April = 2.2%**
- Although the rise in oil prices might save **Venezuela** from default and bankruptcy in 2018, this seems to be the likely outcome.
 - + **As expected, economic conditions continue to deteriorate, it is surprising that Venezuela's government has been able avoid an existential crisis**

3. **Risks** – stated in the negative relative to the forecast; “+” risk realized; “-“ risk not realized
- **U.S. real GDP growth** falls short or exceeds expectations; falling short is the more serious risk as this is likely to happen only if recession occurs
 - + **Q1 2018 real GDP was within the original forecast range, but growth is expected to exceed the top end of the original forecast range for the full year**
 - **U.S. productivity** falls below the bottom end of the 1.3% to 1.5% range
 - **Q1 2018 productivity was within the forecast range**
 - **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 2018 Q1 and should continue to benefit from tax cuts and increased federal spending**
 - **Employment participation rate** falls below the bottom of the forecast range rather than remaining relatively stable or rising modestly
 - **Risk not realized; February’s and March’s participation rates were above the forecast range, but April’s rate was within the forecast range**
 - **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; however, Y/Y wage growth is not accelerating as much as expected**
 - **U.S. unemployment rate** rises above the forecast range or falls below it
 - **Risk not realized; all forecasters expect the unemployment rate to fall further**
 - **Nominal U.S. consumer disposable income** increases less or more than expected; a less than expected increase is the more serious risk
 - **Nominal aggregate consumer income increased 3.2% in Q1, but higher forecast growth still appears likely**
 - **Nominal U.S. consumer spending** increases less or more than expected; a less than expected increase is the more serious risk
 - **Risk not realized**
 - **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
 - **Risk not realized**

- **U.S. private business investment** does not improve as much as or more than expected; falling short of expectations is the more serious risk
 - **Risk not realized, Q1 growth was within the forecast range**
- **Growth rates in U.S. residential housing investment and housing starts** are less than or more than expected; below expectations is the more serious risk
 - + **Q1 residential investment growth was zero; forecasts for 2018 have been revised lower**
 - **Risk not realized, growth in starts during Q1 were consistent with the forecast**
- **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
 - + **Housing prices are rising faster than the top end of the forecast range**
- **U.S. trade deficit** does not widen as much as expected
 - **Risk not realized; a soaring federal budget deficit is likely to drive up the trade deficit**
- **Value of the dollar** rises rather than falling as expected and triggers a global dollar squeeze
 - **Risk not realized; the value of the dollar has declined modestly since the beginning of 2018**
- **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; the strength of the global economy and geopolitical adverse impacts on supply increasingly make it likely that prices will remain above the forecast range**
- **U.S. monetary policy** tightens more than 75 to 100 basis points, spawns financial market uncertainty and contributes to global financial instability
 - **Four rate increases seem increasingly more likely than three**
- **Financial conditions** tighten and cause financial market volatility
 - **Risk not realized; volatility has increased, but financial conditions have increased only modestly; credit spreads remain very tight**
- **U.S. inflation** falls or rises more than expected
 - + **Forecasts have been revised a bit higher, but April core CPI was a bit weaker than expected**
- **U.S. long-term interest rates** fall or rise more than expected

- **Risk not realized, although the 10-year Treasury yield is near the top end of the forecast range**
- **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
 - **Risk not realized, deficit on track to be within the forecast range**
- **U.S. state and local spending** does not rise as fast as expected
 - + **Growth was a barely discernible 0.1% in Q1, but is expected to accelerate during the remainder of 2018**
- **Global GDP growth** does not rise as fast as expected
 - **Risk not realized; growth has been a little stronger than expected**
- **Global trade** declines as the U.S. and other countries pursue protectionist policies
 - **Risk not realized, but emerging U.S. trade policies could eventually slow growth in global trade**
- **European growth** is considerably less than expected
 - **Risk not realized; forecast has been raised**
- **ECB's** quantitative easing program is not successful in raising inflation
 - ✓ **Too soon to evaluate, but inflation remains below the ECB's 2.0% target despite above potential economic growth**
- **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, but good economic times are masking deteriorating public support for further economic and political integration; Hungary and Italy are both on a populist anti-EU course**
- **Chinese** leaders have difficulty implementing **economic reforms**
 - **Risk not realized; financial reforms to limit wealth management products and control credit growth are proceeding; President Xi's reorganization of governmental agencies, which is intended to expedite implementation of environmental protection, financial risk control, and poverty alleviation policy priorities, are proceeding, but entail a risk of slowing economic growth more than expected**
- **China's growth** slows more than expected
 - ✓ **Too soon to evaluate, but some economic indicators were weaker than expected in 2018 Q1**

- ✓ **Escalating trade tensions with the U.S. pose a potential risk to growth; to date rhetoric on both sides has been bellicose, but negotiations to address trade issues are proceeding quietly**
- **Japan** – Abenomics and monetary policy are unsuccessful in raising inflation to the 2 percent target
 - **Risk not realized, inflation continues to languish well below the 2% target; the Bank of Japan has abandoned the 2% target**
- **Emerging economies** – a strong dollar leads to serious difficulties especially for countries with large amounts of dollar-denominated debt.
 - **Risk not realized**
- 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
 - + **President Trump exited the Iran nuclear pact, which could destabilize Iran and drive international oil prices higher**
 - + **The conflict between Palestinians in Gaza and Israel has escalated, resulting in numerous civilian deaths**
- **North Korea** threatens global political stability and potential nuclear war by persisting in testing nuclear devices and intercontinental ballistic missiles
 - **Risk not realized; President Trump in a surprising move has agreed to meet with North Korea's leader in Singapore on June 12th**
 - + **But, the situation is fluid as North Korea has threatened to call off the summit, if the U.S. insists on unilateral nuclear abandonment**
- **New Risk: Global trade war** threatens global economic growth
 - + **President Trump's imposition of steel and aluminum tariffs, termination of the proposed acquisition of Qualcomm by Broadcom, and prospective trade actions, such as tariffs and investment restrictions, specifically aimed at China involving intellectual property theft collectively raise the prospect of retaliation and the possibility of an escalating global trade war**