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# U.S. Macroeconomic Outlook Alternative Scenarios

FROM MOODY'S ANALYTICS

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# Forecast Assumptions

BY MARK ZANDI

## Monetary policy

The Federal Reserve began normalizing interest rates at the mid-December Federal Open Market Committee meeting, raising short-term rates by 0.25 percentage point from the effective zero lower bound that had prevailed since the financial crisis. Rate normalization will be a lengthy process. The Fed has said it will be slow to increase short-term rates, implying the funds rate will not normalize until well after the economy has returned to full employment. If the economy performs consistently with the Moody's Analytics outlook, full employment will be achieved by mid-2016, and short-term interest rates will not normalize until mid-2018.

There is a consensus that the federal funds rate consistent with normalization has fallen since the crisis. Forecasts provided by Fed officials of the funds rate in the long run would suggest an estimated equilibrium rate of approximately 3.5%. This is equal to the sum of the Fed's 2% inflation target, the economy's potential growth rate, and the impact of various economic headwinds.

The most significant headwind is the higher required capitalization and liquidity of the banking system post-crisis. If regulators require banks to hold more capital and be more liquid, then the banks' return on equity and assets will be lower. Thus, for the system to extend the same amount of credit to the economy at the same lending rates, the system's cost of funds needs to fall by a like amount as its returns. This can be achieved if the Fed adopts a lower equilibrium rate, and thus lowers banks' cost of funds. Like the Fed, Moody's Analytics estimates the equilibrium rate to be 3.5%, equal to 2% inflation, plus 2.2% potential real GDP growth, less 0.7% to account for the economic headwinds.

The outlook is based on a steady but orderly rise in long-term rates. Long-term yields will not normalize until global central banks end their quantitative easing programs, and the Fed's balance sheet shrinks. This is not likely until early in the next decade.

## Fiscal policy

The federal government's situation continues to improve. Lawmakers recently reached a budget deal that sets tax and spending policy into early 2017. The Treasury debt limit was also increased sufficiently so that it will not be an issue until the second half of 2017. Based on the budget deal and the outlook, the federal budget deficit is expected to come in near $450 billion this fiscal year, equal to 2.5% of GDP. Given the budget deal, fiscal policy will be a small positive for growth in 2016, adding about 0.2 percentage point to real GDP growth.

Under current fiscal policy, Washington will come close to the goal of achieving fiscal sustainability—future budget deficits that are small enough (near 3% of GDP) that the nation's debt-to-GDP ratio stabilizes, at least through the remainder of the decade. This will be enough to satisfy financial markets and allow the recovery to gain traction as anticipated in the Moody's Analytics baseline outlook.

Deficits and debt will begin to mount again early in the next decade given prospects for large increases in entitlement spending. Further policy changes will need to be made and are assumed in the outlook.

## U.S. dollar

The value of the U.S. dollar has increased substantially against nearly all other currencies, rising nearly 20% on a real broad trade-weighted basis since summer 2014. The strong dollar reflects stronger U.S. economic growth and prospects for monetary policy normalization, and disappointing growth and further monetary easing in much of the rest of the world. Further dollar appreciation is likely, assuming that the Federal Reserve will normalize U.S. monetary policy by mid-2018, but the European Central Bank will continue with its extraordinary policy actions, including QE and negative interest rates, until near decade's end. While the long-run fair value euro/dollar exchange rate is an estimated $1.25, the euro is expected to fall briefly below parity with the dollar by early 2017.

The dollar will appreciate further against the Japanese yen, which has fallen sharply to around ¥120 per dollar. Further yen depreciation is expected through mid-decade with the yen peaking at close to ¥135.

The dollar will remain strong against the currencies of most emerging economies as the Fed normalizes monetary policy, but to depreciate slowly and unevenly against these currencies over the long run. On a real broad trade-weighted basis, the dollar is not too much above its average value since it began to freely float in the early 1970s. The dollar will remain the global economy's principal reserve currency for the foreseeable future.

## Energy prices

Oil prices plunged from more than $100 per barrel in summer 2014 to near $30 per barrel recently. Behind the slump in oil prices was the previous ramp-up in global oil production, particularly among U.S. and Canadian shale oil producers, and the decision by Saudi Arabia not to curtail its production to accommodate the greater North American production. Oil prices are thought to be near their bottom and are expected to slowly make their way back. Underlying this outlook is the already-apparent sharp pullback in investment in North American shale oil production. Rig counts have been cut by more than half and production has begun to decline.

Global oil demand should also receive a lift from the lower prices. This is illustrated by the recent strength of vehicle sales in the U.S., particularly for gas-guzzling large SUVs and light trucks. Nonetheless, Moody's Analytics does not expect oil prices to top $100 per barrel for another decade.

Natural gas prices will remain low, particularly compared with oil prices, for the next decade. There is a substantial glut of natural gas as demand has not fully recovered from the recession and supply has increased given the surge in shale gas production.

| U.S. MACRO BASELINE FORECAST SUMMARY | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Units | 16Q1 | 16Q2 | 16Q3 | 16Q4 | 2016 | 2017 | 2018 | 2019 | 2020 |
| Gross Domestic Product | bcw$ | 16,529.7 | 16,637.3 | 16,772.5 | 16,901.9 | 16,710.4 | 17,220.8 | 17,671.2 | 18,037.6 | 18,335.6 |
| *Change* | *%AR* | *2.1* | *2.6* | *3.3* | *3.1* | *2.3* | *3.1* | *2.6* | *2.1* | *1.7* |
| Federal Budget | $ bil | -312.1 | 78.1 | -157.1 | -230.5 | -621.6 | -729.0 | -820.1 | -866.2 | -895.8 |
| Total Employment | mil | 143.4 | 144.0 | 144.7 | 145.3 | 144.4 | 147.0 | 149.5 | 151.2 | 152.0 |
| *Change* | *%AR* | *1.6* | *1.7* | *1.8* | *1.9* | *1.8* | *1.8* | *1.6* | *1.2* | *0.5* |
| Unemployment Rate | % | 4.9 | 4.9 | 5.0 | 4.9 | 4.9 | 4.7 | 4.7 | 4.7 | 4.9 |
| Light Vehicle Sales | mil, SAAR | 17.9 | 17.7 | 17.7 | 17.5 | 17.7 | 17.0 | 16.8 | 16.6 | 16.5 |
| Residential Housing Starts | mil, SAAR | 1.30 | 1.40 | 1.47 | 1.54 | 1.43 | 1.77 | 1.85 | 1.75 | 1.71 |
| Median Existing-Home Price | $ ths | 228.8 | 230.7 | 232.8 | 234.4 | 231.7 | 237.0 | 240.6 | 247.7 | 258.8 |
| *Change* | *%YA* | *4.9* | *4.3* | *5.8* | *3.5* | *4.6* | *2.3* | *1.5* | *3.0* | *4.5* |
| Consumer Price Index | %AR | -0.8 | 2.8 | 2.9 | 3.1 | 1.3 | 3.1 | 3.0 | 2.8 | 2.5 |
| Federal Funds Rate | % | 0.3 | 0.7 | 0.8 | 1.0 | 0.7 | 2.1 | 3.7 | 3.7 | 3.6 |
| Treasury Yield: 10-Yr Bond | % | 2.19 | 2.49 | 2.73 | 3.03 | 2.61 | 3.78 | 4.04 | 3.98 | 3.98 |
| Baa Corp. - 10-Yr Treasury | DIFF | 3.2 | 3.0 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 2.8 | 2.6 |
| Corporate Profits With IVA & CCA | $ bil | 2,183.2 | 2,241.9 | 2,275.2 | 2,258.1 | 2,239.6 | 2,275.7 | 2,369.3 | 2,443.5 | 2,527.3 |
| *Change* | *%YA* | *8.5* | *7.6* | *11.0* | *6.3* | *8.3* | *1.6* | *4.1* | *3.1* | *3.4* |
| S&P 500 | 1941=10 | 1,968.1 | 1,984.2 | 2,005.1 | 2,011.1 | 1,992.1 | 2,010.8 | 2,031.3 | 2,056.8 | 2,233.7 |
| *Change* | *%YA* | *-4.6* | *-5.6* | *-1.0* | *-2.0* | *-3.4* | *0.9* | *1.0* | *1.3* | *8.6* |

# Stronger Near-Term Rebound ("S1") Scenario

**This above-baseline scenario is designed so that there is a 10% probability that the economy will perform better than in this scenario, broadly speaking, and a 90% probability that it will perform worse.**

The upside scenario, "Stronger Near-Term Rebound," is based on the assumption that the correction in financial markets ends sooner than expected, at which time solid gains in employment and the persistence of lower energy prices than previously projected boost household confidence, consumer spending and housing. Moreover, the euro zone begins to recover faster than the baseline projection, boosting U.S. exports, business sentiment, and therefore nonresidential investment. As a result, payroll employment and income accelerate faster than in the baseline.

The Federal Reserve continues the process of normalizing monetary policy, but financial markets absorb the changes smoothly, and the path of increase in the 10-year Treasury yield is not much different from the baseline. The Fed further raises the federal funds rate in 2016, just as in the baseline, but the pace of increase is a bit faster and the level remains higher than in the baseline until it comes close to 4% by early 2018. The gradual nature of the increases is accommodative to growth, and the expansion of credit supports above-baseline gains in the economy.

As a result, house prices rise a bit faster than in the baseline in late 2015 and early 2016. Stronger demand and household confidence raise the pace of new-housing permits above the baseline in 2016 through 2017.

The stronger near-term growth in real GDP results in additional hiring compared with the baseline so that the unemployment rate declines somewhat more. Whereas the unemployment rate is 4.9% at the end of 2016 in the baseline, it drops to 4.5% in S1.

Real GDP rises more than a percentage point faster than in the baseline over the coming year. On an annual average basis, real GDP growth is 2.9% in 2016 and 3.9% in 2017, compared with 2.3% and 3.1% in the baseline.

| U.S. MACRO S1 SCENARIO—DIFFERENCE FROM BASELINE | Units | 16Q1 | 16Q2 | 16Q3 | 16Q4 | 2016 | 2017 | 2018 | 2019 | 2020 |
|---|---|---|---|---|---|---|---|---|---|---|
| Gross Domestic Product | bcw$ | -0.0 | 65.4 | 122.9 | 201.9 | 97.6 | 234.4 | 73.1 | 13.3 | 11.9 |
| *Change* | *%AR* | *-0.0* | *1.6* | *1.4* | *1.9* | *0.6* | *0.8* | *-1.0* | *-0.3* | *-0.0* |
| Federal Budget | $ bil | -0.0 | 7.4 | 14.7 | 23.7 | 45.7 | 112.1 | 47.0 | 12.3 | 6.9 |
| Total Employment | mil | -0.0 | 0.4 | 0.7 | 0.9 | 0.5 | 0.9 | 0.6 | 0.1 | 0.1 |
| *Change* | *%AR* | *-0.0* | *1.0* | *0.9* | *0.5* | *0.3* | *0.3* | *-0.2* | *-0.3* | *-0.0* |
| Unemployment Rate | % | 0.0 | -0.1 | -0.3 | -0.4 | -0.2 | -0.3 | -0.1 | -0.0 | -0.0 |
| Light Vehicle Sales | mil, SAAR | 0.0 | 0.2 | 0.7 | 0.9 | 0.4 | 0.9 | 0.4 | 0.0 | -0.0 |
| Residential Housing Starts | mil, SAAR | 0.00 | 0.04 | 0.10 | 0.12 | 0.06 | 0.09 | 0.08 | 0.02 | 0.01 |
| Median Existing-Home Price | $ ths | 0.0 | 1.5 | 4.1 | 5.2 | 2.7 | 4.1 | 3.0 | 1.7 | 0.1 |
| *Change* | *%YA* | *0.0* | *0.7* | *1.9* | *2.3* | *1.2* | *0.6* | *-0.5* | *-0.5* | *-0.7* |
| Consumer Price Index | %AR | -0.0 | 1.3 | 1.5 | 1.2 | 0.5 | 0.5 | -0.6 | -0.5 | 0.1 |
| Federal Funds Rate | % | 0.0 | 0.2 | 0.3 | 0.5 | 0.2 | 0.5 | 0.3 | 0.0 | -0.0 |
| Treasury Yield: 10-Yr Bond | % | 0.00 | -0.03 | -0.00 | 0.15 | 0.03 | 0.14 | 0.11 | 0.06 | 0.00 |
| Baa Corp. - 10-Yr Treasury | DIFF | -0.0 | -0.1 | -0.2 | -0.1 | -0.1 | -0.1 | 0.0 | 0.0 | 0.0 |
| Corporate Profits With IVA & CCA | $ bil | 0.0 | 49.1 | 45.8 | 96.9 | 47.9 | 143.3 | 31.5 | 1.6 | 1.6 |
| *Change* | *%YA* | *0.0* | *2.4* | *2.2* | *4.6* | *2.3* | *4.1* | *-4.9* | *-1.3* | *-0.0* |
| S&P 500 | 1941=10 | 0.0 | 12.1 | 99.0 | 92.4 | 50.9 | 58.4 | 8.0 | -0.8 | -0.7 |
| *Change* | *%YA* | *0.0* | *0.6* | *4.9* | *4.5* | *2.5* | *0.3* | *-2.5* | *-0.4* | *0.0* |

| U.S. MACRO S1 SCENARIO—FORECAST SUMMARY | Units | 16Q1 | 16Q2 | 16Q3 | 16Q4 | 2016 | 2017 | 2018 | 2019 | 2020 |
|---|---|---|---|---|---|---|---|---|---|---|
| Gross Domestic Product | bcw$ | 16,529.7 | 16,702.7 | 16,895.4 | 17,103.8 | 16,807.9 | 17,455.2 | 17,744.3 | 18,050.8 | 18,347.5 |
| *Change* | *%AR* | *2.1* | *4.3* | *4.7* | *5.0* | *2.9* | *3.9* | *1.7* | *1.7* | *1.6* |
| Federal Budget | $ bil | -312.1 | 85.5 | -142.5 | -206.8 | -575.8 | -616.9 | -773.1 | -854.0 | -888.9 |
| Total Employment | mil | 143.4 | 144.4 | 145.3 | 146.2 | 144.8 | 147.9 | 150.1 | 151.3 | 152.0 |
| *Change* | *%AR* | *1.6* | *2.7* | *2.7* | *2.4* | *2.1* | *2.1* | *1.5* | *0.8* | *0.5* |
| Unemployment Rate | % | 4.9 | 4.8 | 4.7 | 4.5 | 4.7 | 4.4 | 4.6 | 4.7 | 4.9 |
| Light Vehicle Sales | mil, SAAR | 17.9 | 18.0 | 18.4 | 18.4 | 18.2 | 18.0 | 17.2 | 16.6 | 16.4 |
| Residential Housing Starts | mil, SAAR | 1.30 | 1.44 | 1.57 | 1.66 | 1.49 | 1.86 | 1.92 | 1.78 | 1.72 |
| Median Existing-Home Price | $ ths | 228.8 | 232.2 | 236.9 | 239.6 | 234.4 | 241.1 | 243.5 | 249.4 | 258.9 |
| *Change* | *%YA* | *4.9* | *4.9* | *7.7* | *5.8* | *5.8* | *2.9* | *1.0* | *2.4* | *3.8* |
| Consumer Price Index | %AR | -0.8 | 4.1 | 4.3 | 4.3 | 1.8 | 3.6 | 2.4 | 2.3 | 2.6 |
| Federal Funds Rate | % | 0.3 | 0.9 | 1.1 | 1.5 | 0.9 | 2.6 | 4.0 | 3.7 | 3.6 |
| Treasury Yield: 10-Yr Bond | % | 2.19 | 2.46 | 2.73 | 3.18 | 2.64 | 3.92 | 4.15 | 4.03 | 3.98 |
| Baa Corp. - 10-Yr Treasury | DIFF | 3.2 | 2.9 | 2.9 | 2.9 | 3.0 | 3.0 | 3.1 | 2.9 | 2.6 |
| Corporate Profits With IVA & CCA | $ bil | 2,183.2 | 2,291.0 | 2,321.0 | 2,355.0 | 2,287.6 | 2,419.0 | 2,400.9 | 2,445.1 | 2,528.9 |
| *Change* | *%YA* | *8.5* | *10.0* | *13.2* | *10.9* | *10.7* | *5.7* | *-0.8* | *1.8* | *3.4* |
| S&P 500 | 1941=10 | 1,968.1 | 1,996.3 | 2,104.1 | 2,103.5 | 2,043.0 | 2,069.3 | 2,039.3 | 2,056.0 | 2,233.0 |
| *Change* | *%YA* | *-4.6* | *-5.0* | *3.8* | *2.5* | *-0.9* | *1.3* | *-1.5* | *0.8* | *8.6* |

# Slower Near-Term Recovery ("S2") Scenario

**In this slow-growth scenario, there is a 75% probability that economic conditions will be better, broadly speaking, and a 25% probability that conditions will be worse.**

The downside 25% scenario, "Slower Near-Term Recovery," is based on a number of assumptions. First, the stock market correction persists longer than expected, causing business sentiment to decline. Further, the high value of the dollar continues to subdue exports, as do the slowdown in emerging markets, particularly China, and slower than expected recovery in the euro zone. Additionally, low oil prices do not boost consumer spending because households remain cautious because of rising uncertainty reflected in the sharp drop in global equity markets.

Third, financial markets worry that the Fed will persist with its near-term plan to raise the federal funds rate. As a result, the 10-year Treasury bond yield rises more than anticipated in the second quarter of 2016, to 2.8% on a quarterly average basis, slowing the recovery in housing. The stock market declines moderately over most of 2016, causing business investment to increase more slowly than in the baseline during that time.

Real GDP growth slows almost to a halt, and though recession is avoided, the unemployment rate starts to rise, to about 5.4% by the end of 2016. House prices decline slightly but persistently through 2016. Unit car sales drop back below 17 million by early 2017, leaving sales 300,000 units per year below the baseline at that point.

Over the course of 2016, real GDP rises 1.5 percentage points more slowly than in the baseline. To support the economy, the Fed keeps the federal funds rate flat until the fourth quarter of 2016, in contrast with the slow, steady rise in the baseline.

Later in 2016, the U.S. economy begins to expand more strongly, especially as the Chinese economy stabilizes and the European recovery gains traction, lifting exports. On an annual average basis, real GDP growth is 1.4% in 2016 and 2% in 2017.

U.S. MACRO S2 SCENARIO—DIFFERENCE FROM BASELINE

| | Units | 16Q1 | 16Q2 | 16Q3 | 16Q4 | 2016 | 2017 | 2018 | 2019 | 2020 |
|---|---|---|---|---|---|---|---|---|---|---|
| Gross Domestic Product | bcw$ | 0.0 | -106.9 | -187.7 | -258.7 | -138.3 | -320.8 | -170.9 | -37.4 | -10.2 |
| *Change* | *%AR* | *0.0* | *-2.6* | *-2.0* | *-1.7* | *-0.8* | *-1.1* | *0.9* | *0.8* | *0.2* |
| Federal Budget | $ bil | 0.0 | -10.8 | -25.4 | -36.3 | -72.5 | -172.8 | -107.2 | -24.9 | -7.6 |
| Total Employment | mil | 0.0 | -0.5 | -1.2 | -1.8 | -0.9 | -2.9 | -1.8 | -0.4 | -0.1 |
| *Change* | *%AR* | *0.0* | *-1.4* | *-1.8* | *-1.8* | *-0.6* | *-1.4* | *0.8* | *1.0* | *0.2* |
| Unemployment Rate | % | 0.0 | 0.2 | 0.4 | 0.5 | 0.3 | 0.4 | 0.1 | 0.0 | 0.0 |
| Light Vehicle Sales | mil, SAAR | 0.0 | -0.3 | -0.4 | -0.3 | -0.3 | -0.2 | -0.1 | -0.0 | -0.1 |
| Residential Housing Starts | mil, SAAR | 0.00 | -0.07 | -0.16 | -0.21 | -0.11 | -0.18 | -0.07 | -0.01 | -0.01 |
| Median Existing-Home Price | $ ths | 0.0 | -2.6 | -4.7 | -6.6 | -3.5 | -6.2 | -1.1 | -0.0 | 0.0 |
| *Change* | *%YA* | *0.0* | *-1.2* | *-2.1* | *-2.9* | *-1.6* | *-1.2* | *2.2* | *0.5* | *0.0* |
| Consumer Price Index | %AR | 0.0 | -0.7 | -0.8 | -0.7 | -0.3 | -0.5 | 0.3 | 0.3 | 0.0 |
| Federal Funds Rate | % | 0.0 | -0.3 | -0.5 | -0.3 | -0.3 | -0.4 | -0.3 | -0.1 | -0.0 |
| Treasury Yield: 10-Yr Bond | % | 0.00 | 0.35 | 0.00 | -0.26 | 0.02 | -0.71 | -0.38 | -0.02 | -0.00 |
| Baa Corp. - 10-Yr Treasury | DIFF | -0.0 | -0.0 | 0.0 | 0.2 | 0.1 | 0.3 | 0.1 | -0.1 | -0.0 |
| Corporate Profits With IVA & CCA | $ bil | 0.0 | -57.0 | -138.5 | -189.0 | -96.1 | -140.1 | -103.0 | -10.2 | -0.4 |
| *Change* | *%YA* | *0.0* | *-2.7* | *-6.8* | *-8.9* | *-4.7* | *-2.0* | *2.0* | *4.2* | *0.4* |
| S&P 500 | 1941=10 | 0.0 | -22.2 | -70.2 | -90.1 | -45.6 | -70.3 | -7.2 | -0.6 | -1.0 |
| *Change* | *%YA* | *0.0* | *-1.1* | *-3.5* | *-4.4* | *-2.2* | *-1.2* | *3.3* | *0.3* | *-0.0* |

U.S. MACRO S2 SCENARIO—FORECAST SUMMARY

| | Units | 16Q1 | 16Q2 | 16Q3 | 16Q4 | 2016 | 2017 | 2018 | 2019 | 2020 |
|---|---|---|---|---|---|---|---|---|---|---|
| Gross Domestic Product | bcw$ | 16,529.7 | 16,530.4 | 16,584.9 | 16,643.2 | 16,572.0 | 16,900.0 | 17,500.3 | 18,000.1 | 18,325.3 |
| *Change* | *%AR* | *2.1* | *0.0* | *1.3* | *1.4* | *1.4* | *2.0* | *3.6* | *2.9* | *1.8* |
| Federal Budget | $ bil | -312.1 | 67.3 | -182.6 | -266.8 | -694.1 | -901.8 | -927.3 | -891.1 | -903.3 |
| Total Employment | mil | 143.4 | 143.5 | 143.5 | 143.5 | 143.5 | 144.2 | 147.6 | 150.8 | 151.9 |
| *Change* | *%AR* | *1.6* | *0.3* | *-0.1* | *0.0* | *1.2* | *0.5* | *2.4* | *2.1* | *0.7* |
| Unemployment Rate | % | 4.9 | 5.1 | 5.3 | 5.4 | 5.2 | 5.2 | 4.8 | 4.7 | 4.9 |
| Light Vehicle Sales | mil, SAAR | 17.9 | 17.4 | 17.3 | 17.2 | 17.4 | 16.8 | 16.7 | 16.6 | 16.4 |
| Residential Housing Starts | mil, SAAR | 1.30 | 1.32 | 1.31 | 1.34 | 1.32 | 1.59 | 1.78 | 1.74 | 1.70 |
| Median Existing-Home Price | $ ths | 228.8 | 228.2 | 228.1 | 227.8 | 228.2 | 230.8 | 239.4 | 247.7 | 258.8 |
| *Change* | *%YA* | *4.9* | *3.1* | *3.7* | *0.5* | *3.0* | *1.2* | *3.7* | *3.5* | *4.5* |
| Consumer Price Index | %AR | -0.8 | 2.1 | 2.1 | 2.5 | 1.0 | 2.6 | 3.3 | 3.1 | 2.5 |
| Federal Funds Rate | % | 0.3 | 0.3 | 0.3 | 0.7 | 0.4 | 1.7 | 3.4 | 3.6 | 3.6 |
| Treasury Yield: 10-Yr Bond | % | 2.19 | 2.84 | 2.73 | 2.77 | 2.63 | 3.07 | 3.66 | 3.95 | 3.98 |
| Baa Corp. - 10-Yr Treasury | DIFF | 3.2 | 3.0 | 3.1 | 3.3 | 3.1 | 3.5 | 3.1 | 2.7 | 2.6 |
| Corporate Profits With IVA & CCA | $ bil | 2,183.2 | 2,184.9 | 2,136.7 | 2,069.1 | 2,143.5 | 2,135.6 | 2,266.4 | 2,433.3 | 2,526.9 |
| *Change* | *%YA* | *8.5* | *4.9* | *4.2* | *-2.6* | *3.7* | *-0.4* | *6.1* | *7.4* | *3.8* |
| S&P 500 | 1941=10 | 1,968.1 | 1,962.0 | 1,934.9 | 1,921.0 | 1,946.5 | 1,940.5 | 2,024.1 | 2,056.2 | 2,232.7 |
| *Change* | *%YA* | *-4.6* | *-6.7* | *-4.5* | *-6.4* | *-5.6* | *-0.3* | *4.3* | *1.6* | *8.6* |

# Moderate Recession ("S3") Scenario

**In this recession scenario, there is a 90% probability that the economy will perform better, broadly speaking, and a 10% probability that it will perform worse.**

The downside 10% scenario, "Moderate Recession," is based on a number of assumptions. First, the selloff in global stock and risky bond markets deepens on concerns that the Chinese economy will slow even more than expected, leading to a significant slowdown throughout Asia. Besides reducing U.S. exports to Asia, this causes oil prices to fall even further, lowering business investment in energy exploration. Moreover, the reduction in business sentiment overall lowers other business investment spending. Further, bond investors believe that the Fed will mistakenly begin raising the fed funds rate anyway, and so there is also a selloff in the Treasury bond market. The 10-year Treasury yield jumps to 3.2% in the second quarter of 2016 and higher than that intra-quarter. The reduction in wealth dampens consumer spending. Higher borrowing costs and the decline in consumer confidence cause home sales to decline.

The euro zone drops back into recession, contributing to the economic and financial stress faced by heavily indebted nations in the region, especially Greece. These developments lower U.S. exports to Europe. The combination of weaker consumer spending, exports and business investment drives the U.S. economy into a recession that begins in the second quarter of 2016. The Fed responds by lowering the federal funds rate back to below 0.2%. Corporate bond spreads rise well above the baseline trend, lowering business investment further. However, the downturn causes foreign investors to once again see dollar-denominated securities as a safe haven, causing Treasury bond yields to decline again. The recession is less severe than the 2008-2009 downturn but lasts through the first quarter of 2017.

Rising unemployment during the recession causes housing to decline. Reduced federal support to housing relative to that in the 2008-2009 recession contributes to the weakness, as does a lack of mortgage credit availability. House prices, as measured by the National Association of Realtors median sale price, drop cumulatively by 10% from the first quarter of 2016 to the second quarter of 2017. However, the trough is well above that of 2011 following the Great Recession. Housing starts fall from the third quarter of 2015, cumulatively declining by more than 10% by early 2017. Unit auto sales decline starting in the first quarter of 2016 to a trough of less than 14.5 million units in mid-2017. Low capacity utilization in manufacturing and weak demand cause business investment to fall significantly throughout 2016 and the first half of 2017.

The recovery begins in the first quarter of 2017. With the economy weak, the Fed keeps the fed funds target rate below 0.2% until mid-2018. The cumulative peak-to-trough decrease in real GDP is 2.2%. Real GDP declines on an annual average basis by 0.2% in 2016 and 0.9% in 2017. The contraction in the labor market causes the unemployment rate to peak at 8.2% in 2017.

## U.S. MACRO S3 SCENARIO—DIFFERENCE FROM BASELINE

| | Units | 16Q1 | 16Q2 | 16Q3 | 16Q4 | 2016 | 2017 | 2018 | 2019 | 2020 |
|---|---|---|---|---|---|---|---|---|---|---|
| Gross Domestic Product | bcw$ | 0.0 | -209.3 | -448.4 | -666.4 | -331.0 | -984.2 | -1008.1 | -669.3 | -253.2 |
| *Change* | *%AR* | *0.0* | *-5.1* | *-5.8* | *-5.3* | *-2.0* | *-3.9* | *0.0* | *2.2* | *2.5* |
| Federal Budget | $ bil | 0.0 | -29.2 | -68.9 | -105.9 | -203.9 | -600.3 | -633.6 | -496.8 | -273.4 |
| Total Employment | mil | 0.0 | -1.0 | -3.1 | -5.1 | -2.3 | -7.8 | -8.1 | -6.2 | -2.9 |
| *Change* | *%AR* | *0.0* | *-2.9* | *-5.6* | *-5.7* | *-1.6* | *-3.8* | *-0.1* | *1.4* | *2.3* |
| Unemployment Rate | % | 0.0 | 0.8 | 1.7 | 2.6 | 1.3 | 3.2 | 2.4 | 1.7 | 1.0 |
| Light Vehicle Sales | mil, SAAR | 0.0 | -1.0 | -2.0 | -2.6 | -1.4 | -2.6 | -1.4 | -0.7 | -0.2 |
| Residential Housing Starts | mil, SAAR | 0.00 | -0.13 | -0.33 | -0.51 | -0.24 | -0.72 | -0.55 | -0.24 | -0.02 |
| Median Existing-Home Price | $ ths | 0.0 | -6.2 | -14.9 | -21.7 | -10.7 | -29.2 | -22.7 | -13.4 | -4.4 |
| *Change* | *%YA* | *0.0* | *-2.8* | *-6.8* | *-9.6* | *-4.8* | *-8.2* | *3.3* | *4.6* | *4.1* |
| Consumer Price Index | %AR | 0.0 | -2.6 | -2.9 | -2.8 | -1.0 | -1.9 | -0.1 | 0.3 | 0.8 |
| Federal Funds Rate | % | 0.0 | -0.5 | -0.7 | -0.9 | -0.5 | -2.0 | -3.0 | -1.3 | -0.2 |
| Treasury Yield: 10-Yr Bond | % | 0.00 | 0.68 | 0.00 | -0.57 | 0.03 | -1.60 | -1.34 | -0.33 | -0.04 |
| Baa Corp. - 10-Yr Treasury | DIFF | -0.0 | 0.1 | 0.4 | 0.7 | 0.3 | 0.7 | 0.1 | -0.2 | -0.3 |
| Corporate Profits With IVA & CCA | $ bil | 0.0 | -136.0 | -318.2 | -444.7 | -224.7 | -469.0 | -463.0 | -339.6 | -173.1 |
| *Change* | *%YA* | *0.0* | *-6.5* | *-15.5* | *-20.9* | *-10.9* | *-11.9* | *1.4* | *7.2* | *8.5* |
| S&P 500 | 1941=10 | 0.0 | -149.0 | -270.5 | -334.0 | -188.4 | -349.5 | -276.5 | -191.2 | -101.0 |
| *Change* | *%YA* | *0.0* | *-7.1* | *-13.4* | *-16.3* | *-9.1* | *-8.8* | *4.6* | *5.1* | *5.7* |

## U.S. MACRO S3 SCENARIO—FORECAST SUMMARY

| | Units | 16Q1 | 16Q2 | 16Q3 | 16Q4 | 2016 | 2017 | 2018 | 2019 | 2020 |
|---|---|---|---|---|---|---|---|---|---|---|
| Gross Domestic Product | bcw$ | 16,529.7 | 16,428.0 | 16,324.1 | 16,235.5 | 16,379.3 | 16,236.6 | 16,663.1 | 17,368.3 | 18,082.4 |
| *Change* | *%AR* | *2.1* | *-2.4* | *-2.5* | *-2.2* | *0.2* | *-0.9* | *2.6* | *4.2* | *4.1* |
| Federal Budget | $ bil | -312.1 | 48.9 | -226.0 | -336.4 | -825.5 | -1,329.2 | -1,453.7 | -1,363.0 | -1,169.2 |
| Total Employment | mil | 143.4 | 143.0 | 141.6 | 140.2 | 142.1 | 139.3 | 141.4 | 145.0 | 149.1 |
| *Change* | *%AR* | *1.6* | *-1.2* | *-3.8* | *-3.9* | *0.2* | *-2.0* | *1.5* | *2.6* | *2.8* |
| Unemployment Rate | % | 4.9 | 5.7 | 6.6 | 7.6 | 6.2 | 7.9 | 7.2 | 6.5 | 5.9 |
| Light Vehicle Sales | mil, SAAR | 17.9 | 16.8 | 15.7 | 14.9 | 16.3 | 14.5 | 15.3 | 15.9 | 16.2 |
| Residential Housing Starts | mil, SAAR | 1.30 | 1.27 | 1.14 | 1.03 | 1.18 | 1.04 | 1.30 | 1.52 | 1.69 |
| Median Existing-Home Price | $ ths | 228.8 | 224.5 | 217.9 | 212.6 | 220.9 | 207.9 | 217.8 | 234.3 | 254.4 |
| *Change* | *%YA* | *4.9* | *1.5* | *-0.9* | *-6.1* | *-0.2* | *-5.9* | *4.8* | *7.6* | *8.6* |
| Consumer Price Index | %AR | -0.8 | 0.2 | -0.1 | 0.3 | 0.3 | 1.2 | 2.9 | 3.1 | 3.2 |
| Federal Funds Rate | % | 0.3 | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 | 0.7 | 2.4 | 3.4 |
| Treasury Yield: 10-Yr Bond | % | 2.19 | 3.16 | 2.73 | 2.45 | 2.64 | 2.18 | 2.70 | 3.64 | 3.94 |
| Baa Corp. - 10-Yr Treasury | DIFF | 3.2 | 3.1 | 3.5 | 3.8 | 3.4 | 3.8 | 3.2 | 2.7 | 2.3 |
| Corporate Profits With IVA & CCA | $ bil | 2,183.2 | 2,105.9 | 1,957.0 | 1,813.4 | 2,014.9 | 1,806.7 | 1,906.4 | 2,103.9 | 2,354.1 |
| *Change* | *%YA* | *8.5* | *1.1* | *-4.5* | *-14.6* | *-2.5* | *-10.3* | *5.5* | *10.4* | *11.9* |
| S&P 500 | 1941=10 | 1,968.1 | 1,835.3 | 1,734.6 | 1,677.1 | 1,803.8 | 1,661.3 | 1,754.8 | 1,865.6 | 2,132.7 |
| *Change* | *%YA* | *-4.6* | *-12.7* | *-14.4* | *-18.3* | *-12.5* | *-7.9* | *5.6* | *6.3* | *14.3* |

# Protracted Slump ("S4") Scenario

**In this recession scenario, there is a 96% probability that the economy will perform better, broadly speaking, and a 4% probability that it will perform worse.**

The downside 4% scenario, "Protracted Slump," is caused by multiple factors. First, the stock market plunges as evidence builds that Chinese economic growth has declined sharply, leading to declines elsewhere in Asia. U.S. household wealth and confidence decline. U.S. exports to Asia fall further, as do oil prices, lowering business investment in energy exploration. At the same time, the Fed mishandles its communications and financial markets become convinced that the Fed will still raise the federal funds rate. As a result, the 10-year Treasury yield jumps to 3.5% on a quarterly average basis in the first quarter of 2016 and higher than that intra-quarter. This leads to an even deeper decline in investor sentiment and the value of the dollar also spikes, causing financial volatility to rise sharply.

Further, the euro zone drops back into a deep recession as the burden of fiscal austerity forces Greece out of the euro zone and squeezes the financial systems of other heavily indebted nations, once again threatening the existence of the single-currency area. The U.S. banking system is strained as a result of its ties to the European banks, leading credit availability to shrink significantly.

The drop-off in U.S. exports and business investment precipitates a deep recession beginning in the second quarter of 2016. Foreign investors again see the dollar as a safe haven. The Fed lowers the federal funds rate back to less than 0.2%. However, the impasse among U.S. policymakers prevents a federal fiscal policy response to stem the downturn. Consumer sentiment and spending decrease sharply. Reduced household wealth and high unemployment cause consumers to pull back further on their spending. Unit auto sales decline steadily from the first quarter of 2016 through the third quarter of 2017 to a trough of less than 12 million, compared with the baseline pace of above 16 million. Corporate bond spreads rise significantly above baseline levels, causing business investment to drop sharply throughout 2016 and 2017.

Delinquencies and foreclosures rise again, federal support to housing is more limited than in the 2008-2009 recession, and the already-low level of mortgage credit availability dries up. The result is a cycle of house price declines. The drop from the first quarter of 2016 through the first quarter of 2018 is 21%, though this is above the 2011 trough. Housing starts also fall, decreasing 40% from the first quarter of 2016 through the end of 2018. The recovery in homebuilding is slow until 2020.

In this deep slump, real GDP declines a cumulative 4.6% peak to trough. On an annual average basis, real GDP declines 0.2% in 2016 and 2.8% in 2017. The unemployment rate reaches a high of 10.1% in the fourth quarter of 2017 and remains above 9% until 2019. Inflation is negative throughout 2016. To prevent the economy from sliding further, the Fed keeps interest rates near 0% until the end of 2019.

| U.S. MACRO S4 SCENARIO—DIFFERENCE FROM BASELINE | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Units | 16Q1 | 16Q2 | 16Q3 | 16Q4 | 2016 | 2017 | 2018 | 2019 | 2020 |
| Gross Domestic Product | bcw$ | 0.0 | -276.5 | -541.5 | -811.9 | -407.5 | -1367.7 | -1748.5 | -1763.5 | -1548.7 |
| *Change* | *%AR* | *0.0* | *-6.7* | *-6.4* | *-6.6* | *-2.5* | *-5.8* | *-2.2* | *0.1* | *1.5* |
| Federal Budget | $ bil | 0.0 | -38.0 | -87.6 | -134.7 | -260.3 | -849.3 | -1081.3 | -1086.8 | -981.1 |
| Total Employment | mil | 0.0 | -1.3 | -3.7 | -6.4 | -2.9 | -11.0 | -13.2 | -12.7 | -10.9 |
| *Change* | *%AR* | *0.0* | *-3.7* | *-6.4* | *-7.7* | *-2.0* | *-5.7* | *-1.5* | *0.5* | *1.4* |
| Unemployment Rate | % | 0.0 | 0.9 | 2.2 | 3.6 | 1.7 | 5.1 | 5.1 | 4.0 | 3.1 |
| Light Vehicle Sales | mil, SAAR | 0.0 | -1.5 | -2.8 | -3.6 | -2.0 | -4.8 | -4.8 | -4.2 | -3.4 |
| Residential Housing Starts | mil, SAAR | 0.00 | -0.17 | -0.51 | -0.77 | -0.36 | -1.12 | -1.21 | -0.96 | -0.80 |
| Median Existing-Home Price | $ ths | 0.0 | -8.4 | -19.5 | -30.6 | -14.6 | -51.5 | -58.5 | -53.8 | -45.9 |
| *Change* | *%YA* | *0.0* | *-3.8* | *-8.9* | *-13.5* | *-6.6* | *-16.8* | *-3.3* | *3.5* | *5.3* |
| Consumer Price Index | %AR | 0.0 | -3.9 | -3.5 | -3.7 | -1.4 | -3.3 | -1.1 | -0.2 | 0.7 |
| Federal Funds Rate | % | 0.0 | -0.5 | -0.7 | -0.9 | -0.5 | -2.0 | -3.6 | -3.5 | -2.8 |
| Treasury Yield: 10-Yr Bond | % | 0.0 | 1.0 | 0.0 | -0.8 | 0.1 | -2.0 | -2.2 | -1.6 | -1.0 |
| Baa Corp. - 10-Yr Treasury | DIFF | -0.0 | 0.2 | 0.9 | 1.4 | 0.6 | 1.4 | 0.5 | 0.1 | 0.0 |
| Corporate Profits With IVA & CCA | $ bil | 0.0 | -181.6 | -363.6 | -484.6 | -257.4 | -613.8 | -754.7 | -760.0 | -708.4 |
| *Change* | *%YA* | *0.0* | *-8.7* | *-17.7* | *-22.8* | *-12.5* | *-17.8* | *-7.0* | *1.1* | *4.6* |
| S&P 500 | 1941=10 | 0.0 | -209.2 | -528.6 | -688.5 | -356.6 | -824.8 | -866.8 | -809.7 | -774.8 |
| *Change* | *%YA* | *0.0* | *-10.0* | *-26.1* | *-33.5* | *-17.3* | *-28.4* | *-2.8* | *5.8* | *8.4* |

| U.S. MACRO S4 SCENARIO—FORECAST SUMMARY | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Units | 16Q1 | 16Q2 | 16Q3 | 16Q4 | 2016 | 2017 | 2018 | 2019 | 2020 |
| Gross Domestic Product | bcw$ | 16,529.7 | 16,360.8 | 16,231.1 | 16,090.0 | 16,302.9 | 15,853.1 | 15,922.6 | 16,274.1 | 16,786.8 |
| *Change* | *%AR* | *2.1* | *-4.0* | *-3.1* | *-3.4* | *-0.2* | *-2.8* | *0.4* | *2.2* | *3.2* |
| Federal Budget | $ bil | -312.1 | 40.1 | -244.7 | -365.1 | -881.8 | -1,578.3 | -1,901.4 | -1,953.1 | -1,876.9 |
| Total Employment | mil | 143.4 | 142.7 | 141.0 | 138.9 | 141.5 | 136.1 | 136.3 | 138.5 | 141.1 |
| *Change* | *%AR* | *1.6* | *-2.1* | *-4.6* | *-5.8* | *-0.2* | *-3.8* | *0.1* | *1.6* | *1.9* |
| Unemployment Rate | % | 4.9 | 5.9 | 7.2 | 8.5 | 6.6 | 9.8 | 9.8 | 8.7 | 8.0 |
| Light Vehicle Sales | mil, SAAR | 17.9 | 16.3 | 15.0 | 13.9 | 15.7 | 12.2 | 12.0 | 12.3 | 13.0 |
| Residential Housing Starts | mil, SAAR | 1.30 | 1.22 | 0.96 | 0.77 | 1.06 | 0.65 | 0.64 | 0.79 | 0.91 |
| Median Existing-Home Price | $ ths | 228.8 | 222.3 | 213.3 | 203.8 | 217.0 | 185.6 | 182.1 | 193.9 | 213.0 |
| *Change* | *%YA* | *4.9* | *0.5* | *-3.1* | *-10.0* | *-2.0* | *-14.5* | *-1.9* | *6.5* | *9.8* |
| Consumer Price Index | %AR | -0.8 | -1.2 | -0.6 | -0.6 | -0.1 | -0.2 | 1.9 | 2.6 | 3.1 |
| Federal Funds Rate | % | 0.3 | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 | 0.1 | 0.2 | 0.8 |
| Treasury Yield: 10-Yr Bond | % | 2.19 | 3.46 | 2.73 | 2.27 | 2.66 | 1.79 | 1.83 | 2.42 | 2.97 |
| Baa Corp. - 10-Yr Treasury | DIFF | 3.2 | 3.2 | 4.0 | 4.4 | 3.7 | 4.5 | 3.6 | 2.9 | 2.7 |
| Corporate Profits With IVA & CCA | $ bil | 2,183.2 | 2,060.3 | 1,911.7 | 1,773.5 | 1,982.2 | 1,661.9 | 1,614.7 | 1,683.5 | 1,818.9 |
| *Change* | *%YA* | *8.5* | *-1.1* | *-6.7* | *-16.5* | *-4.1* | *-16.2* | *-2.8* | *4.3* | *8.0* |
| S&P 500 | 1941=10 | 1,968.1 | 1,775.0 | 1,476.5 | 1,322.6 | 1,635.6 | 1,186.1 | 1,164.5 | 1,247.2 | 1,458.9 |
| *Change* | *%YA* | *-4.6* | *-15.6* | *-27.1* | *-35.6* | *-20.6* | *-27.5* | *-1.8* | *7.1* | *17.0* |

# Below-Trend Long-Term Growth (“S5”) Scenario

**With this low-performance long-term scenario, there is a 96% probability that the economy will perform better, broadly speaking, and a 4% probability that it will perform worse.**

In the downside 4% scenario, “Below-Trend Long-Term Growth,” U.S. growth continues in 2016, but the rate is below the baseline pace as declining stock prices, still-low mortgage credit availability, and financial volatility leave households and businesses cautious about spending and the high value of the dollar limits exports, as does the slower than expected euro zone recovery.

However, whereas other downside scenarios feature a subsequent demand-driven recovery back to the baseline trend, supply-side constraints prevent that outcome in S5. Instead, the pace of growth remains below that of the baseline for an extended time for several reasons. Households continue to engage in more precautionary saving and therefore less spending, and mortgage credit availability is low. Less risk-taking reflects in higher yield spreads in 2016 and lower stock prices than in the baseline. Capital accumulation and productivity gains are lower than in the baseline, owing to the higher cost of borrowing and lower business investment.

Real GDP growth is lower than in the baseline over the next decade, and the level of real GDP is permanently lower than in the baseline. On an annual average basis, real GDP increases 1.8% in 2016 and 2% in 2017.

The unemployment rate rises to 5% and remains there over the next several years. The long dislocation in the labor market continues to hamper the typical long-term pattern of advances in worker productivity, as employees find fewer opportunities to develop their skills while on the job. The result is productivity growth that is below the long-run trend for a decade.

| U.S. MACRO S5 SCENARIO—DIFFERENCE FROM BASELINE | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Units | 16Q1 | 16Q2 | 16Q3 | 16Q4 | 2016 | 2017 | 2018 | 2019 | 2020 |
| Gross Domestic Product | bcw$ | 0.0 | -58.7 | -105.2 | -152.2 | -79.0 | -258.3 | -339.5 | -400.2 | -422.7 |
| *Change* | *%AR* | *0.0* | *-1.4* | *-1.1* | *-1.1* | *-0.5* | *-1.1* | *-0.4* | *-0.3* | *-0.1* |
| Federal Budget | $ bil | 0.0 | -5.8 | -11.1 | -16.9 | -33.8 | -120.2 | -155.4 | -158.7 | -166.9 |
| Total Employment | mil | 0.0 | -0.3 | -0.6 | -1.1 | -0.5 | -1.8 | -1.8 | -1.6 | -1.6 |
| *Change* | *%AR* | *0.0* | *-0.8* | *-1.0* | *-1.4* | *-0.4* | *-0.9* | *-0.0* | *0.1* | *0.1* |
| Unemployment Rate | % | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.3 | 0.3 | 0.4 | 0.4 |
| Light Vehicle Sales | mil, SAAR | 0.0 | -0.2 | -0.4 | -0.3 | -0.2 | -0.2 | -0.3 | -0.4 | -0.5 |
| Residential Housing Starts | mil, SAAR | 0.00 | -0.08 | -0.16 | -0.20 | -0.11 | -0.27 | -0.32 | -0.27 | -0.19 |
| Median Existing-Home Price | $ ths | 0.0 | -1.4 | -2.7 | -3.8 | -2.0 | -5.5 | -5.9 | -7.9 | -10.8 |
| *Change* | *%YA* | *0.0* | *-0.6* | *-1.2* | *-1.7* | *-0.9* | *-1.5* | *-0.2* | *-0.8* | *-1.0* |
| Consumer Price Index | %AR | 0.0 | -0.9 | -0.7 | -0.6 | -0.3 | -0.6 | -0.4 | -0.2 | 0.1 |
| Federal Funds Rate | % | 0.0 | -0.1 | -0.2 | -0.2 | -0.1 | -0.6 | -0.8 | -0.5 | -0.4 |
| Treasury Yield: 10-Yr Bond | % | 0.00 | -0.20 | -0.31 | -0.44 | -0.24 | -0.77 | -0.71 | -0.30 | -0.23 |
| Baa Corp. - 10-Yr Treasury | DIFF | -0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| Corporate Profits With IVA & CCA | $ bil | 0.0 | -29.4 | -50.2 | -68.3 | -37.0 | -81.3 | -103.1 | -119.9 | -158.6 |
| *Change* | *%YA* | *0.0* | *-1.4* | *-2.4* | *-3.2* | *-1.8* | *-2.0* | *-0.8* | *-0.6* | *-1.5* |
| S&P 500 | 1941=10 | 0.0 | -7.5 | -14.7 | -26.9 | -12.3 | -39.9 | -77.0 | -92.2 | -106.8 |
| *Change* | *%YA* | *0.0* | *-0.4* | *-0.7* | *-1.3* | *-0.6* | *-1.4* | *-1.9* | *-0.7* | *-0.3* |

| U.S. MACRO S5 SCENARIO—FORECAST SUMMARY | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Units | 16Q1 | 16Q2 | 16Q3 | 16Q4 | 2016 | 2017 | 2018 | 2019 | 2020 |
| Gross Domestic Product | bcw$ | 16,529.7 | 16,578.6 | 16,667.3 | 16,749.7 | 16,631.3 | 16,962.6 | 17,331.6 | 17,637.4 | 17,912.9 |
| *Change* | *%AR* | *2.1* | *1.2* | *2.2* | *2.0* | *1.8* | *2.0* | *2.2* | *1.8* | *1.6* |
| Federal Budget | $ bil | -312.1 | 72.3 | -168.2 | -247.4 | -655.4 | -849.2 | -975.5 | -1,024.9 | -1,062.7 |
| Total Employment | mil | 143.4 | 143.8 | 144.0 | 144.2 | 143.9 | 145.3 | 147.6 | 149.6 | 150.4 |
| *Change* | *%AR* | *1.6* | *0.9* | *0.8* | *0.5* | *1.4* | *1.0* | *1.6* | *1.3* | *0.6* |
| Unemployment Rate | % | 4.9 | 5.0 | 5.0 | 5.1 | 5.0 | 5.0 | 5.1 | 5.1 | 5.3 |
| Light Vehicle Sales | mil, SAAR | 17.9 | 17.5 | 17.3 | 17.2 | 17.5 | 16.8 | 16.5 | 16.2 | 16.0 |
| Residential Housing Starts | mil, SAAR | 1.30 | 1.32 | 1.31 | 1.34 | 1.32 | 1.50 | 1.53 | 1.48 | 1.52 |
| Median Existing-Home Price | $ ths | 228.8 | 229.3 | 230.1 | 230.5 | 229.7 | 231.6 | 234.6 | 239.8 | 248.1 |
| *Change* | *%YA* | *4.9* | *3.6* | *4.6* | *1.8* | *3.7* | *0.8* | *1.3* | *2.2* | *3.5* |
| Consumer Price Index | %AR | -0.8 | 1.9 | 2.1 | 2.6 | 1.0 | 2.5 | 2.6 | 2.7 | 2.5 |
| Federal Funds Rate | % | 0.3 | 0.6 | 0.7 | 0.8 | 0.6 | 1.5 | 3.0 | 3.3 | 3.2 |
| Treasury Yield: 10-Yr Bond | % | 2.19 | 2.29 | 2.42 | 2.58 | 2.37 | 3.01 | 3.33 | 3.68 | 3.75 |
| Baa Corp. - 10-Yr Treasury | DIFF | 3.2 | 3.0 | 3.2 | 3.2 | 3.2 | 3.3 | 3.1 | 2.9 | 2.7 |
| Corporate Profits With IVA & CCA | $ bil | 2,183.2 | 2,212.5 | 2,225.0 | 2,189.8 | 2,202.6 | 2,194.4 | 2,266.3 | 2,323.6 | 2,368.6 |
| *Change* | *%YA* | *8.5* | *6.2* | *8.5* | *3.1* | *6.5* | *-0.4* | *3.3* | *2.5* | *1.9* |
| S&P 500 | 1941=10 | 1,968.1 | 1,976.7 | 1,990.4 | 1,984.2 | 1,979.9 | 1,971.0 | 1,954.2 | 1,964.6 | 2,126.9 |
| *Change* | *%YA* | *-4.6* | *-6.0* | *-1.8* | *-3.4* | *-3.9* | *-0.4* | *-0.8* | *0.5* | *8.3* |

# Stagflation ("S6") Scenario

**In this stagflation scenario, there is a 90% probability that the economy will perform better, broadly speaking, and a 10% probability that it will perform worse.**

The downside 10% scenario, "Stagflation," assumes that a wage-price spiral develops more quickly than expected as the U.S. economy approaches full employment. Additionally, global oil demand rebounds faster than expected, and as a result oil prices rebound, ultimately reaching more than $100 by early 2017. Pressures on core consumer prices increase as unit labor costs accelerate and the higher oil prices push up the costs of delivering goods and services.

The Federal Reserve begins to fight inflation aggressively and increases the fed funds rate from nearly 0% in 2015 to more than 4% in early 2017. Yields on 10-year Treasury securities rise to 5% by late 2016 as a result of inflation expectations and Fed tightening. The economy weakens substantially and drops into recession by the fourth quarter of 2016. Forced to make a choice in the stagflation environment, the Fed keeps interest rates high to fight inflation, and as a result the downturn persists through the third quarter of 2017. The jobless rate rises to 8% by the fourth quarter of 2017.

Inflation and inflation expectations begin to subside in 2017, allowing the Fed to reduce the fed funds rate. As a result, the economy begins to recover in the fourth quarter of 2017.

On an annual average basis, the change in real GDP is 1% in 2016 and -1.8% in 2017. Inflation, as measured by the CPI, rises to well above 5% in 2016, more than 3 percentage points above the baseline, before beginning to decelerate.

## U.S. MACRO S6 SCENARIO—DIFFERENCE FROM BASELINE

| | Units | 16Q1 | 16Q2 | 16Q3 | 16Q4 | 2016 | 2017 | 2018 | 2019 | 2020 |
|---|---|---|---|---|---|---|---|---|---|---|
| Gross Domestic Product | bcw$ | 0.0 | -105.0 | -240.5 | -507.3 | -213.2 | -1,021.2 | -1,241.9 | -913.8 | -376.0 |
| *Change* | *%AR* | *0.0* | *-2.6* | *-3.3* | *-6.4* | *-1.3* | *-4.9* | *-1.2* | *2.2* | *3.2* |
| Federal Budget | $ bil | 0.0 | -8.3 | -19.1 | -49.7 | -77.1 | -534.6 | -755.9 | -703.3 | -511.7 |
| Total Employment | mil | 0.0 | -0.6 | -1.1 | -2.2 | -1.0 | -7.0 | -9.3 | -8.5 | -5.7 |
| *Change* | *%AR* | *0.0* | *-1.7* | *-1.2* | *-3.3* | *-0.7* | *-4.2* | *-1.6* | *0.6* | *2.0* |
| Unemployment Rate | % | 0.0 | 0.2 | 0.3 | 1.0 | 0.4 | 2.8 | 2.9 | 2.1 | 1.5 |
| Light Vehicle Sales | mil, SAAR | 0.0 | -0.0 | -0.1 | -1.0 | -0.3 | -2.5 | -2.9 | -2.1 | -1.2 |
| Residential Housing Starts | mil, SAAR | 0.00 | -0.12 | -0.27 | -0.46 | -0.21 | -0.80 | -0.68 | -0.33 | -0.14 |
| Median Existing-Home Price | $ ths | 0.0 | -1.2 | -2.0 | -7.3 | -2.6 | -22.5 | -24.3 | -14.1 | -5.0 |
| *Change* | *%YA* | *0.0* | *-0.6* | *-0.9* | *-3.2* | *-1.2* | *-8.6* | *-0.7* | *5.1* | *4.1* |
| Consumer Price Index | %AR | 0.0 | 5.8 | 6.0 | 3.5 | 2.0 | 1.6 | -1.9 | -0.6 | -0.3 |
| Federal Funds Rate | % | 0.0 | 1.2 | 3.1 | 3.3 | 1.9 | 1.0 | -0.7 | -0.1 | 0.1 |
| Treasury Yield: 10-Yr Bond | % | 0.00 | 0.99 | 2.18 | 2.23 | 1.35 | 0.60 | -0.23 | -0.00 | 0.00 |
| Baa Corp. - 10-Yr Treasury | DIFF | -0.0 | -0.1 | -0.0 | 0.3 | 0.0 | 0.7 | 0.3 | -0.0 | -0.2 |
| Corporate Profits With IVA & CCA | $ bil | 0.0 | -23.2 | -59.7 | -205.4 | -72.0 | -412.0 | -559.4 | -489.0 | -338.7 |
| *Change* | *%YA* | *0.0* | *-1.1* | *-2.9* | *-9.7* | *-3.5* | *-15.6* | *-7.0* | *4.9* | *8.5* |
| S&P 500 | 1941=10 | 0.0 | -24.5 | -40.2 | -191.2 | -64.0 | -383.2 | -530.0 | -493.7 | -386.7 |
| *Change* | *%YA* | *0.0* | *-1.2* | *-2.0* | *-9.3* | *-3.1* | *-16.5* | *-8.8* | *2.9* | *9.6* |

## U.S. MACRO S6 SCENARIO—FORECAST SUMMARY

| | Units | 16Q1 | 16Q2 | 16Q3 | 16Q4 | 2016 | 2017 | 2018 | 2019 | 2020 |
|---|---|---|---|---|---|---|---|---|---|---|
| Gross Domestic Product | bcw$ | 16,529.7 | 16,532.4 | 16,532.0 | 16,394.6 | 16,497.2 | 16,199.7 | 16,429.2 | 17,123.8 | 17,959.5 |
| *Change* | *%AR* | *2.1* | *0.1* | *-0.0* | *-3.3* | *1.0* | *-1.8* | *1.4* | *4.2* | *4.9* |
| Federal Budget | $ bil | -312.1 | 69.8 | -176.3 | -280.2 | -698.7 | -1,263.6 | -1,575.9 | -1,569.6 | -1,407.5 |
| Total Employment | mil | 143.4 | 143.4 | 143.6 | 143.1 | 143.4 | 140.1 | 140.2 | 142.7 | 146.2 |
| *Change* | *%AR* | *1.6* | *-0.1* | *0.5* | *-1.4* | *1.1* | *-2.3* | *0.1* | *1.8* | *2.5* |
| Unemployment Rate | % | 4.9 | 5.1 | 5.2 | 5.9 | 5.3 | 7.5 | 7.6 | 6.8 | 6.4 |
| Light Vehicle Sales | mil, SAAR | 17.9 | 17.7 | 17.6 | 16.5 | 17.4 | 14.5 | 13.9 | 14.5 | 15.3 |
| Residential Housing Starts | mil, SAAR | 1.30 | 1.28 | 1.20 | 1.08 | 1.21 | 0.97 | 1.17 | 1.42 | 1.57 |
| Median Existing-Home Price | $ ths | 228.8 | 229.5 | 230.8 | 227.0 | 229.0 | 214.6 | 216.3 | 233.6 | 253.8 |
| *Change* | *%YA* | *4.9* | *3.7* | *4.9* | *0.2* | *3.4* | *-6.3* | *0.8* | *8.0* | *8.6* |
| Consumer Price Index | %AR | -0.8 | 8.6 | 8.9 | 6.6 | 3.3 | 4.7 | 1.1 | 2.2 | 2.1 |
| Federal Funds Rate | % | 0.3 | 1.8 | 3.9 | 4.3 | 2.6 | 3.1 | 3.0 | 3.6 | 3.7 |
| Treasury Yield: 10-Yr Bond | % | 2.19 | 3.47 | 4.91 | 5.26 | 3.96 | 4.38 | 3.81 | 3.98 | 3.99 |
| Baa Corp. - 10-Yr Treasury | DIFF | 3.2 | 2.9 | 3.0 | 3.3 | 3.1 | 3.8 | 3.3 | 2.8 | 2.5 |
| Corporate Profits With IVA & CCA | $ bil | 2,183.2 | 2,218.7 | 2,215.6 | 2,052.8 | 2,167.6 | 1,863.7 | 1,809.9 | 1,954.5 | 2,188.5 |
| *Change* | *%YA* | *8.5* | *6.5* | *8.1* | *-3.4* | *4.8* | *-14.0* | *-2.9* | *8.0* | *12.0* |
| S&P 500 | 1941=10 | 1,968.1 | 1,959.7 | 1,964.9 | 1,819.9 | 1,928.2 | 1,627.7 | 1,501.3 | 1,563.2 | 1,847.1 |
| *Change* | *%YA* | *-4.6* | *-6.8* | *-3.0* | *-11.4* | *-6.5* | *-15.6* | *-7.8* | *4.1* | *18.2* |

# Next-Cycle Recession ("S7") Scenario

**This scenario is designed to reflect the fact that recessions periodically occur in the U.S. economy, though the timing is highly uncertain. The probability that the economy will enter this or a similar recession sometime over the next five years is estimated at 10%.**

The "Next-Cycle Recession" scenario is constructed to be a benchmark, independent of current business cycle conditions. Since World War II, the U.S. economy has experienced 12 recessions. The longest was the Great Recession, which lasted 18 months; the shortest was six months in 1980. The average duration was 11 months. The shortest expansion between recessions was six months in 1980 and the longest was 120 months from 1991 to 2001. The average duration of expansion was 60 months.

Based on these data and the fact that the economy is still recovering from the Great Recession, this scenario posits that a recession would begin in mid-2018. Over the course of the following year, the unemployment rate rises more than 3 percentage points, comparable to all but the worst postwar recessions. Since the baseline unemployment rate in early 2018 is forecast to be in the range of 4.8%, the peak unemployment rate in this scenario is 8%. This increase in joblessness is consistent with a fall in real GDP of just more than 2%, the average in postwar recessions.

The causes of the decline are mostly generic in nature but are exacerbated by monetary policy tightening in response to above-trend inflation. Inflation tops out at more than 3.5% in early 2018 as oil prices rise to nearly $90 per barrel, well above the baseline level. The Fed reins in price growth by raising the fed funds rate to more than 5%, or 150 basis points above the baseline. The result is broadly weaker aggregate demand, highlighted by a fallout in real estate and financial markets, coincident contraction in consumer and business sentiment and spending, fiscal austerity as government budgets at all levels are squeezed, and declines in international trade. Consequently, yields on Treasury bonds decline once the recession begins and drop below baseline levels. The stock market drops by about 25%, and yield spreads on risky debt rise significantly. Foreclosures rise, house prices on purchase transactions cumulatively drop in the range of 10%, and the pace of new residential and nonresidential construction declines. Likewise, unit car sales fall to a comparable trough. To support the economy, the Federal Reserve eases monetary policy. However, because of long-term federal deficit issues, Congress does not engage in a fiscal stimulus.

The downturn is posited to last more than a full year, comparable to the postwar average. Consistent with all recessions since 1990, the ensuing recovery is slow for the first year. To support the economy, the Fed keeps policy rates accommodative for a few years after the recovery begins.

U.S. MACRO S7 SCENARIO—DIFFERENCE FROM BASELINE

| | Units | 19Q3 | 19Q4 | 20Q1 | 20Q2 | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|---|---|---|---|
| Gross Domestic Product | bcw$ | -794.3 | -850.1 | -864.0 | -853.9 | -741.5 | -808.5 | -507.6 | -194.7 | -25.7 |
| *Change* | *%AR* | *-1.3* | *-1.2* | *-0.2* | *0.3* | *-3.4* | *-0.3* | *1.8* | *1.8* | *0.9* |
| Federal Budget | $ bil | -148.0 | -152.3 | -153.3 | -149.9 | -529.2 | -587.2 | -474.4 | -294.4 | -188.5 |
| Total Employment | mil | -5.4 | -5.6 | -5.8 | -5.6 | -4.9 | -5.5 | -3.8 | -0.6 | 0.3 |
| *Change* | *%AR* | *-1.1* | *-0.7* | *-0.5* | *0.7* | *-2.9* | *-0.4* | *1.2* | *2.2* | *0.6* |
| Unemployment Rate | % | 3.4 | 3.2 | 3.0 | 2.7 | 3.0 | 2.5 | 1.2 | 0.3 | 0.0 |
| Light Vehicle Sales | mil, SAAR | -2.5 | -2.3 | -2.0 | -1.6 | -2.4 | -1.6 | -0.4 | 0.0 | 0.0 |
| Residential Housing Starts | mil, SAAR | -0.75 | -0.73 | -0.70 | -0.65 | -0.69 | -0.59 | -0.14 | 0.06 | 0.02 |
| Median Existing-Home Price | $ ths | -33.8 | -40.2 | -39.1 | -39.7 | -28.8 | -39.0 | -29.1 | -11.1 | -6.3 |
| *Change* | *%YA* | *-13.8* | *-13.5* | *-9.9* | *-6.0* | *-11.1* | *-4.1* | *5.5* | *8.0* | *1.9* |
| Consumer Price Index | %AR | -1.4 | -1.9 | 0.3 | 0.5 | -1.3 | -0.4 | 0.6 | 0.4 | 0.0 |
| Federal Funds Rate | % | -1.5 | -2.0 | -1.9 | -1.6 | -1.1 | -1.5 | -0.6 | 0.0 | 0.0 |
| Treasury Yield: 10-Yr Bond | % | -1.02 | -1.13 | -0.88 | -0.66 | -0.66 | -0.57 | -0.07 | -0.00 | 0.00 |
| Baa Corp. - 10-Yr Treasury | DIFF | 0.8 | 0.8 | 0.7 | 0.6 | 0.7 | 0.5 | -0.0 | -0.2 | -0.2 |
| Corporate Profits With IVA & CCA | $ bil | -536.1 | -542.9 | -539.3 | -531.8 | -477.2 | -529.0 | -462.4 | -256.1 | -92.5 |
| *Change* | *%YA* | *-21.3* | *-16.3* | *-8.8* | *-1.7* | *-18.2* | *-1.8* | *4.7* | *10.4* | *7.0* |
| S&P 500 | 1941=10 | -618.1 | -671.0 | -667.4 | -653.4 | -488.7 | -638.8 | -486.4 | -262.7 | -59.8 |
| *Change* | *%YA* | *-27.1* | *-26.1* | *-23.1* | *-12.0* | *-21.4* | *-6.9* | *13.5* | *13.1* | *9.2* |

U.S. MACRO S7 SCENARIO—FORECAST SUMMARY

| | Units | 19Q3 | 19Q4 | 20Q1 | 20Q2 | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|---|---|---|---|
| Gross Domestic Product | bcw$ | 17,286.5 | 17,304.1 | 17,358.5 | 17,438.0 | 17,296.0 | 17,527.1 | 18,184.3 | 18,895.2 | 19,453.9 |
| *Change* | *%AR* | *0.5* | *0.4* | *1.3* | *1.8* | *-1.3* | *1.3* | *3.7* | *3.9* | *3.0* |
| Federal Budget | $ bil | -365.4 | -434.1 | -536.6 | -144.7 | -1,395.4 | -1,483.0 | -1,427.8 | -1,316.4 | -1,253.7 |
| Total Employment | mil | 146.0 | 146.0 | 146.0 | 146.3 | 146.3 | 146.5 | 148.9 | 153.0 | 155.0 |
| *Change* | *%AR* | *-0.4* | *-0.0* | *0.0* | *0.9* | *-1.7* | *0.1* | *1.6* | *2.8* | *1.3* |
| Unemployment Rate | % | 8.2 | 8.0 | 7.8 | 7.6 | 7.7 | 7.4 | 6.3 | 5.4 | 4.9 |
| Light Vehicle Sales | mil, SAAR | 14.0 | 14.2 | 14.5 | 14.8 | 14.2 | 14.9 | 16.1 | 16.7 | 16.9 |
| Residential Housing Starts | mil, SAAR | 0.98 | 0.97 | 1.00 | 1.06 | 1.06 | 1.11 | 1.64 | 1.90 | 1.83 |
| Median Existing-Home Price | $ ths | 215.0 | 211.1 | 215.1 | 217.4 | 218.9 | 219.9 | 244.0 | 276.9 | 295.0 |
| *Change* | *%YA* | *-10.5* | *-9.8* | *-5.9* | *-1.6* | *-8.1* | *0.4* | *11.0* | *13.5* | *6.5* |
| Consumer Price Index | %AR | 1.2 | 0.6 | 2.8 | 2.9 | 1.6 | 2.1 | 2.9 | 2.7 | 2.3 |
| Federal Funds Rate | % | 2.1 | 1.7 | 1.7 | 2.0 | 2.6 | 2.1 | 3.0 | 3.7 | 3.8 |
| Treasury Yield: 10-Yr Bond | % | 2.94 | 2.83 | 3.09 | 3.31 | 3.31 | 3.41 | 3.97 | 4.09 | 4.14 |
| Baa Corp. - 10-Yr Treasury | DIFF | 3.6 | 3.5 | 3.4 | 3.2 | 3.6 | 3.1 | 2.5 | 2.2 | 2.2 |
| Corporate Profits With IVA & CCA | $ bil | 1,914.5 | 1,927.2 | 1,950.4 | 1,978.4 | 1,966.3 | 1,998.2 | 2,190.6 | 2,522.2 | 2,821.8 |
| *Change* | *%YA* | *-18.4* | *-13.3* | *-5.9* | *1.4* | *-15.1* | *1.6* | *9.6* | *15.1* | *11.9* |
| S&P 500 | 1941=10 | 1,438.6 | 1,419.6 | 1,471.9 | 1,550.9 | 1,568.2 | 1,595.0 | 1,967.9 | 2,364.0 | 2,723.4 |
| *Change* | *%YA* | *-26.0* | *-23.6* | *-18.1* | *-4.1* | *-20.1* | *1.7* | *23.4* | *20.1* | *15.2* |

# Low Oil Price ("S8") Scenario

**In this upside scenario, there is a 10% probability that the economy will perform better, broadly speaking, and a 90% probability that it will perform worse.**

The upside 10% "Low Oil Price" scenario assumes that the price of West Texas Intermediate remains in the range of $35 per barrel for three full years until the end of 2018. In contrast, the baseline presumes a steady rebound in the price over that time to nearly $70 per barrel, based on the assumption of strengthening global demand for energy. The fundamental basis of this scenario is that recent and prospective increases in supply are larger than anticipated and more than offset the rise in demand. Higher than anticipated growth in supply from Iran as a result of the political agreement with the U.S. is consistent with this scenario.

Although the U.S. oil industry is larger than those of most other nations, the country is a net importer of oil and the nonoil share of the economy is far greater than in such major petroleum producers as Saudi Arabia, Canada, Russia and Venezuela. Consequently, although the lower oil prices cause a decline in oil exploration and production, the effect on the rest of the economy is positive. For one thing, inflation, as measured by the top-line CPI, is a percentage point lower than in the baseline from the fourth quarter of 2015 to the third quarter of 2016.

In terms of real economic activity, lower oil prices have the same effect as a tax cut. Lower gasoline costs increase disposable income available for other consumer spending. Moreover, the reduced energy costs overall increase the profitability of industrial production. As a result, real GDP rises faster from 2016 through 2019. By the end of 2018, the level of real GDP is 2% higher than in the baseline.

However, the energy industry itself contracts, with oil exploration and related employment declining from 2016 through 2018. Oil production also falls somewhat during that time.

Oil prices begin to rise again in 2019, and as a result overall real GDP growth subsequently decelerates to the baseline over the next several years. The assumption is that oil prices rise relative to the CPI and ultimately return to the baseline level by the end of 2024. The basis for this assumption is the historical observation that, although oil prices are highly volatile, over long periods the inflation-adjusted price of oil has trended neither up nor down.

U.S. MACRO S8 SCENARIO—DIFFERENCE FROM BASELINE

| | Units | 16Q1 | 16Q2 | 16Q3 | 16Q4 | 2016 | 2017 | 2018 | 2019 | 2020 |
|---|---|---|---|---|---|---|---|---|---|---|
| Gross Domestic Product | bcw$ | -0.0 | -15.3 | 19.2 | 49.5 | 13.3 | 157.3 | 292.6 | 337.0 | 264.5 |
| *Change* | *%AR* | *-0.0* | *-0.4* | *0.9* | *0.7* | *0.1* | *0.9* | *0.8* | *0.2* | *-0.4* |
| Federal Budget | $ bil | -0.0 | 2.3 | 9.5 | 17.3 | 29.1 | 150.6 | 247.7 | 286.4 | 263.7 |
| Total Employment | mil | 0.0 | -0.2 | 0.1 | 0.2 | 0.0 | 1.1 | 2.4 | 2.8 | 2.3 |
| *Change* | *%AR* | *0.0* | *-0.5* | *0.7* | *0.5* | *0.0* | *0.8* | *0.8* | *0.3* | *-0.4* |
| Unemployment Rate | % | 0.0 | -0.1 | -0.2 | -0.3 | -0.2 | -0.5 | -0.5 | -0.4 | -0.3 |
| Light Vehicle Sales | mil, SAAR | -0.0 | 0.0 | 0.7 | 1.0 | 0.4 | 1.6 | 1.3 | 0.7 | -0.0 |
| Residential Housing Starts | mil, SAAR | -0.00 | 0.01 | 0.03 | 0.05 | 0.02 | 0.08 | 0.10 | 0.01 | -0.07 |
| Median Existing-Home Price | $ ths | -0.0 | 0.3 | 1.0 | 2.1 | 0.9 | 4.8 | 5.3 | 2.4 | -0.0 |
| *Change* | *%YA* | *-0.0* | *0.2* | *0.5* | *0.9* | *0.4* | *1.7* | *0.2* | *-1.2* | *-1.0* |
| Consumer Price Index | %AR | -0.0 | -2.8 | -0.7 | -0.9 | -0.7 | -0.8 | -0.4 | -0.0 | 0.4 |
| Federal Funds Rate | % | 0.0 | -0.2 | -0.4 | -0.7 | -0.3 | -1.1 | -0.8 | 0.0 | 0.6 |
| Treasury Yield: 10-Yr Bond | % | 0.00 | -0.42 | -0.62 | -0.73 | -0.44 | -0.72 | -0.10 | 0.30 | 0.30 |
| Baa Corp. - 10-Yr Treasury | DIFF | -0.0 | 0.0 | 0.0 | -0.1 | -0.0 | -0.1 | -0.1 | -0.1 | -0.0 |
| Corporate Profits With IVA & CCA | $ bil | 0.0 | 14.1 | 70.0 | 129.5 | 53.4 | 261.4 | 380.5 | 426.7 | 385.1 |
| *Change* | *%YA* | *0.0* | *0.7* | *3.4* | *6.1* | *2.6* | *9.0* | *4.3* | *1.2* | *-2.0* |
| S&P 500 | 1941=10 | 0.0 | 23.1 | 57.1 | 57.2 | 34.4 | 104.7 | 135.3 | 115.8 | 67.1 |
| *Change* | *%YA* | *0.0* | *1.1* | *2.8* | *2.8* | *1.7* | *3.5* | *1.4* | *-1.0* | *-2.7* |

U.S. MACRO S8 SCENARIO—FORECAST SUMMARY

| | Units | 16Q1 | 16Q2 | 16Q3 | 16Q4 | 2016 | 2017 | 2018 | 2019 | 2020 |
|---|---|---|---|---|---|---|---|---|---|---|
| Gross Domestic Product | bcw$ | 16,529.7 | 16,622.0 | 16,791.7 | 16,951.3 | 16,723.7 | 17,378.2 | 17,963.7 | 18,374.6 | 18,600.1 |
| *Change* | *%AR* | *2.1* | *2.3* | *4.1* | *3.9* | *2.3* | *3.9* | *3.4* | *2.3* | *1.2* |
| Federal Budget | $ bil | -312.1 | 80.4 | -147.6 | -213.1 | -592.4 | -578.3 | -572.4 | -579.8 | -632.1 |
| Total Employment | mil | 143.4 | 143.8 | 144.7 | 145.6 | 144.4 | 148.2 | 151.9 | 154.0 | 154.2 |
| *Change* | *%AR* | *1.6* | *1.1* | *2.5* | *2.3* | *1.8* | *2.6* | *2.5* | *1.4* | *0.1* |
| Unemployment Rate | % | 4.9 | 4.8 | 4.7 | 4.6 | 4.8 | 4.3 | 4.2 | 4.3 | 4.6 |
| Light Vehicle Sales | mil, SAAR | 17.9 | 17.7 | 18.4 | 18.5 | 18.1 | 18.6 | 18.1 | 17.3 | 16.4 |
| Residential Housing Starts | mil, SAAR | 1.30 | 1.41 | 1.50 | 1.60 | 1.45 | 1.85 | 1.95 | 1.76 | 1.64 |
| Median Existing-Home Price | $ ths | 228.8 | 231.1 | 233.8 | 236.4 | 232.5 | 241.8 | 245.9 | 250.1 | 258.8 |
| *Change* | *%YA* | *4.9* | *4.4* | *6.3* | *4.4* | *5.0* | *4.0* | *1.7* | *1.7* | *3.5* |
| Consumer Price Index | %AR | -0.8 | 0.0 | 2.2 | 2.3 | 0.6 | 2.2 | 2.6 | 2.8 | 2.8 |
| Federal Funds Rate | % | 0.3 | 0.5 | 0.4 | 0.3 | 0.4 | 1.1 | 2.9 | 3.7 | 4.1 |
| Treasury Yield: 10-Yr Bond | % | 2.19 | 2.07 | 2.11 | 2.29 | 2.17 | 3.06 | 3.94 | 4.27 | 4.28 |
| Baa Corp. - 10-Yr Treasury | DIFF | 3.2 | 3.0 | 3.1 | 3.0 | 3.1 | 3.0 | 3.0 | 2.8 | 2.6 |
| Corporate Profits With IVA & CCA | $ bil | 2,183.2 | 2,256.0 | 2,345.2 | 2,387.6 | 2,293.0 | 2,537.1 | 2,749.8 | 2,870.2 | 2,912.4 |
| *Change* | *%YA* | *8.5* | *8.3* | *14.4* | *12.4* | *10.9* | *10.6* | *8.4* | *4.4* | *1.5* |
| S&P 500 | 1941=10 | 1,968.1 | 2,007.4 | 2,062.2 | 2,068.3 | 2,026.5 | 2,115.6 | 2,166.6 | 2,172.6 | 2,300.8 |
| *Change* | *%YA* | *-4.6* | *-4.5* | *1.8* | *0.7* | *-1.7* | *4.4* | *2.4* | *0.3* | *5.9* |

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