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U.S. Macroeconomic Outlook Alternative Scenarios

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THE U.S. MACROECONOMIC OUTLOOK ALTERNATIVE SCENARIOS ARE WRITTEN BY EDWARD FRIEDMAN

Forecast Assumptions

BY MARK ZANDI

Recent Performance

The Federal Reserve is expected to steadily normalize interest rates over the next three years. This will entail three or four 25-basis point rate hikes each year, with the federal funds rate peaking just below 4% by the end of the decade. This is just above the Moody's Analytics 3.5% estimate of the long-run equilibrium funds rate.

Driving the expected normalization in monetary policy is an economy that is at full employment and is expected to be operating beyond full employment by this time next year. Inflation is also expected to steadily accelerate, from under its 2% target as measured by the growth in the core consumer expenditure deflator to a high near 3% by early 2019. Fueling the stronger inflation will be the tight labor market, strong rent growth, and greater medical care inflation as the constraints created by the implementation of the Affordable Care Act fade. Higher oil and other commodity prices will also offset any impacts on inflation of an anticipated further strengthening of the U.S. dollar.

Moody's Analytics estimates the federal funds rate consistent with normalization, the long-run equilibrium rate, to be 3.5%, down from more than 4% before the crisis. Fed officials believe that the long-run equilibrium rate is closer to 3%. The equilibrium rate is consistent with a sum of the Fed's 2% inflation target and the economy's long-run potential growth rate.

However, the equilibrium rate can vary substantially from its long-run value, depending on the state of the business and credit cycle. We estimate the current equilibrium rate to be closer to 2%, because of temporary headwinds, including the significant increase in the required capitalization and liquidity of the post-crisis banking system.

Normalization also means that the Fed will allow its balance sheet of nearly $4.5 trillion in Treasury and mortgage securities to diminish. In a full-employment economy, the Fed's balance sheet should be closer to $3 trillion. It will begin this process as soon as late this year.

The economic outlook is based on a steady but orderly rise in long-term rates, with 10-year Treasury yields rising from about 2.4% currently to more than 4% by late 2019. Long-term yields will not fully normalize until global central banks end their quantitative easing programs and the Fed's balance sheet shrinks—not likely until early in the next decade.

Fiscal policy

The federal government's fiscal situation is good, but weakening. The budget deficit will come in close to $700 billion this fiscal year, equal to nearly 3.5% of GDP. This is up from less than $600 billion in fiscal 2016. The deficit hit its nadir of $439 billion in fiscal 2015, equal to 2.4% of GDP.

Lawmakers will be busy as the Trump administration pushes forward its fiscal policy agenda. While this agenda is very uncertain, we are assuming tax cuts costing more than $500 billion over the next decade on a static basis. The majority of the cuts will be to corporate taxes. More government spending on veterans' benefits and the military is expected, while more infrastructure spending is not as sure. There is also the sequester—the across-the-board spending cuts that were suspended as part of the 2013 budget deal. It is set to kick back in at the start of fiscal 2018. Sequester cuts to defense and mandatory entitlement programs likely will be suspended again or eliminated, but Republicans will allow the cuts to most nondefense discretionary programs. Even so, spending seems set to increase by almost $500 billion over the next decade.

President Trump's tax and spending policies are assumed to be largely deficit-financed, and thus even on a dynamic basis—after accounting for the effects for the tax and spending policies on the economy—they will add about $1 trillion to cumulative budget deficits over the next decade.

U.S. dollar

The dollar has been remarkably stable on a real broad trade-weighted basis over the past two years. It is expected to remain strong, but further significant sustained dollar appreciation is likely over. The global economy is performing much better, including in Europe, China, and much of the rest of Asia.

The dollar is expected to remain strong against the currencies of most emerging economies as the Federal Reserve normalizes, but to depreciate slowly and unevenly against these currencies over the long run.

Despite the surge in its value on a real broad trade-weighted basis, the dollar is still not much above its average value since it began to freely float in the early 1970s. The dollar's resilience will ensure that it will remain the global economy's principal reserve currency for the foreseeable future.

Energy prices

Oil prices are hovering below $50 per barrel, only about half the $100 per barrel price that prevailed before their collapse in summer 2014. Oil prices will remain volatile, but slowly rise. Underlying this outlook is the sharp pullback in investment in North American shale oil production. Rig counts have risen but remain well below the number in operation prior to the break in oil prices. OPEC has also moved to curtail production, and higher-cost non-OPEC producers in the North Sea and Arctic are curtailing investment plans.

The long-run price for oil is estimated to be between $60 and $65 per barrel. Given still-high levels of global oil inventories, oil prices are not expected to rise above $60 per barrel on a consistent basis before 2018.

Brent oil prices should continue to narrow relative to West Texas Intermediate. Natural gas prices will remain low for the next decade. There is a substantial glut of natural gas, because demand has not fully recovered from the recession and supply has increased as a result of the surge in shale gas production.

Stronger Near-Term Growth (“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 Growth,” is based on the assumption that the increase in the stock market since the presidential election signals improving business sentiment leading to a greater than expected rise in business investment. The policies of the new administration propel faster than expected growth without triggering a trade war. Further, the persistent gains in U.S. employment put upward pressure on wage rates, boosting household incomes, consumer confidence, spending and house prices more than expected, and the rise in the stock market also supports spending.

The U.K. and the EU quickly agree on a compromise that results in a relatively painless departure of the U.K. from the EU. As a result, the euro zone recovers faster than the baseline projection, lifting U.S. exports and therefore nonresidential investment. The stronger than anticipated global growth raises the demand for oil, pushing oil prices above $70 per barrel by mid-2018.

The Federal Reserve accelerates the process of normalizing monetary policy compared with the baseline. The 10-year Treasury yield rises higher than in the baseline because of the stronger growth, inflation that is faster than in the baseline, and the prospect of a larger federal deficit. The Fed raises the federal funds rate more quickly than in the baseline throughout 2017, and the level remains higher than in the baseline until it hits a peak of 4.1% in late 2019. The higher interest rates cause the economy to decelerate at that point, but growth remains faster than in the baseline. Longer term, the additional investment increases the capital stock more than expected, leading to real GDP elevated above baseline levels because of increased productivity.

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% a year from now in the baseline, it drops to 3.7% in S1.

Real GDP rises nearly 2 percentage points faster than in the baseline over the coming year. On an annual average basis, real GDP growth is 2.7% in 2017 and 4.4% in 2018, compared with 2.4% and 2.8% in the baseline.

Slower Near-Term Growth ("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 Growth," is based on a number of assumptions. First, following the early optimism, concerns build among investors about the U.S. presidential administration's policies, causing the stock market to begin to trend down. Second, the Treasury bond market temporarily weakens more than expected ahead of the anticipated tapering by the Fed of its balance sheet. Third, uncertainty increases about the potential negative effects on the European economy of the U.K.'s departure from the EU as the likelihood increases that the separation will be contentious and that cross-border trade will drop.

The stock market decline causes business sentiment to decrease, reducing growth in business investment to below the pace in the baseline. Further, the decline in wealth diminishes household confidence and growth in consumer spending. Additionally, financial markets worry that the Fed will persist with its near-term plan to raise the federal funds rate despite concerns about growth. Oil prices level off in the high $40 per barrel range, moderately below the timeline in the baseline, because of weaker demand.

Real GDP grows more slowly than in the baseline over the next couple of years, and the unemployment rate drifts up to nearly 5% by 2018, nearly a point higher than in the baseline. However, recession is avoided. House prices rise more slowly than the baseline. Unit car sales decline over the coming year, leaving sales 500,000 units per year below the baseline in 2018.

Over the coming year, real GDP growth is nearly 2 percentage points lower than in the baseline. To support the economy, the Fed keeps the federal funds rate unchanged until mid-2018, in contrast with the increases in the baseline.

By 2019, the U.S. economy begins to grow somewhat faster, especially as prospects for a positive resolution to the U.K.'s departure from the EU improve. On an annual average basis, real GDP growth is 2.1% in 2017 and 1.2% in 2018.

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 stock market sells off on fears that the policies of the Trump administration, particularly regarding international trade, immigration and healthcare, will weaken the U.S. economy. The reduction in wealth causes consumer spending to decline.

Protectionist U.S. policy damages global confidence and weakens international trade. Further, negotiations over the U.K.'s departure from the EU become more contentious. Additionally, bond investors believe that the Fed will mistakenly continue tightening anyway, causing a brief but sharp selloff in the Treasury bond market.

The euro zone drops back into recession, contributing to the economic and financial stress faced by heavily indebted nations in the region, especially Italy and Greece. These developments lower U.S. exports to Europe. Oil prices fall to less than $30 per barrel, reducing investment in exploration. In the U.S., the declines in financial markets and weaker consumer spending, exports and business investment result in a recession that begins in the third quarter of 2017. The Fed responds by lowering the federal funds rate, ultimately back to less than 0.2%. Corporate bond spreads rise well above the baseline trend, lowering business investment. However, the downturn causes foreign investors to once again see dollar-denominated securities as a safe haven, causing Treasury bond yields to decline again starting in the fourth quarter of 2017. The recession is less severe than the 2008-2009 downturn but lasts through mid-2018.

The unemployment rate rises during the recession to a peak of 8% by the fourth quarter of 2018, causing housing to decline. Reduced federal support to housing relative to that in the 2008-2009 recession contributes to the weakness, as does a decline in mortgage credit availability. House prices, as measured by the National Association of Realtors' median sales price, drop cumulatively by 11% from the second quarter of 2017 to the fourth quarter of 2018. However, the trough is well above that in 2011 following the Great Recession. Housing starts fall from the first quarter of 2017, cumulatively declining by 30% by late 2018. Unit auto sales decline starting in the first quarter of 2017 to a trough of 13.3 million units in the third quarter of 2018. Low capacity utilization in manufacturing and weak demand cause business investment to fall significantly from the third quarter of 2017 through the fourth quarter of 2018.

The recovery begins in the fourth quarter of 2018. With the economy weak, the Fed keeps the federal funds target rate below 0.2% until the end of 2019. The cumulative peak-to-trough decrease in real GDP is 2%. The percentage change in real GDP is 1.6% on an annual average basis in 2017 and -1.3% in 2018. Reduced business investment lowers productivity so that the level of real GDP remains below the baseline indefinitely.

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 falls sharply as investors fear that the policies of the Trump administration will weaken the economy. At the same time, bond prices collapse because of the concern that deficits will rise greatly. The government puts higher tariffs on Chinese and Mexican imports. Further, negotiations over the U.K.'s departure from the EU break down, causing international trade and overall economic activity in Europe to drop, and other nations to consider leaving the EU. Additionally, the Chinese housing market collapses, with house prices declining sharply. U.S. consumer confidence plummets. Oil prices plunge again, lowering business investment in energy exploration.

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. In particular, the high volume of nonperforming loans in Italy puts that nation at risk of leaving the single-currency area as well. The U.S. banking system is strained as a result of its ties to the European banks, significantly shrinking credit availability.

The combination of global financial market stress and the drop-off in U.S. exports and business investment precipitates a deep recession beginning in the third quarter of 2017. After the initial drop in bond markets, foreign investors again see the dollar as a safe haven. The Fed lowers the federal funds rate ultimately 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. Rising unemployment causes consumers to pull back on their spending. Unit auto sales decline steadily from the second quarter of 2017 throughout early 2019 to a trough of less than 11 million, compared with the baseline pace of 16.5 million. Corporate bond spreads rise significantly above baseline levels, causing business investment to drop sharply throughout 2018.

Delinquencies and foreclosures rise again, federal support to housing is more limited than in the 2008-2009 recession, and mortgage credit availability dries up. The result is a cycle of house price declines, resulting in a cumulative drop of more than 21% from the first quarter of 2017 through mid-2019. Housing starts also fall, cumulatively decreasing by more than 50% by mid-2019. The recovery in homebuilding is slow until 2020. In this deep slump, real GDP declines a cumulative 4.5% peak to trough. On an annual average basis, the percentage change in real GDP is 1.4% in 2017 and -2.8% in 2018. The unemployment rate reaches a high of 10% in the second quarter of 2019 and remains above 9% through early 2021. Inflation is negative in 2018. To prevent the economy from sliding further, the Fed keeps interest rates near 0% through the end of 2020.

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 2017, but the rate is below the baseline pace as the economic policies of the Trump administration increase uncertainty among businesses and households alike. In addition, wage increases are slower than in the baseline, leaving households cautious about spending. Also, the high value of the dollar limits exports, as does the slower than expected euro zone recovery.

However, whereas other downside scenarios feature at least some demand-driven recovery, 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 engage in precautionary saving and therefore less spending. Stock prices are lower than in the baseline. Capital accumulation and productivity gains are lower than in the baseline, owing to 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 2.1% in 2017 and 1.7% in 2018.

The unemployment rate drifts back up to the range of 5% and remains there for years. The long dislocation in the labor market hampers 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.

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 hits full employment. Additionally, global oil demand rebounds faster than expected, and as a result, oil prices rebound sharply, ultimately reaching $85 per barrel by mid-2018. 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.

Yields on 10-year Treasury securities rise to 5.4% by early 2018 as a result of inflation expectations and Fed tightening. The Federal Reserve begins to fight inflation aggressively and increases the fed funds rate to 5.2% by mid-2018. The economy weakens substantially and drops into recession by the first quarter of 2018. 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 first quarter of 2019. The jobless rate rises to a peak of 8% by that time.

As a result of the recession and rising unemployment, inflation and inflation expectations begin to subside in 2018, allowing the Fed to reduce the fed funds rate. The economy begins to recover in the second quarter of 2019.

On an annual average basis, the change in real GDP is 2.1% in 2017 and -0.4% in 2018. Inflation, as measured by the CPI, rises to 6% in 2018, more than 3 percentage points above the baseline, before beginning to decelerate.

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 especially slow recovery from the 2008-2009 recession, this scenario posits that a recession would begin in the fourth quarter of 2019. Over the course of the following year, the unemployment rate rises more than 3 percentage points, comparable to all but the worst postwar recessions. The peak unemployment rate in this scenario is 8%. This increase in joblessness is consistent with a fall in real GDP of 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 4% in early 2019 as oil prices rise to more than $70 per barrel, $20 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 widen significantly. Foreclosures increase, 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 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.

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 drops to about $35 per barrel and remains there for more than three years. In contrast, the baseline presumes slow growth in the price over that time to the range of $54 per barrel, based on the assumption of strengthening global demand for energy. The fundamental basis of this scenario is that prospective increases in supply are larger than anticipated and more than offset the rise in demand. Higher than anticipated growth in supply from such countries as Iran and Libya would be consistent with this scenario, as would the inability of OPEC to enforce an agreement to reduce supply. A reduction in regulation in the U.S. energy industry by the Trump administration would also contribute to significant unexpected increases in domestic production.

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 over the coming year.

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 2017 through 2021. By 2022, the level of real GDP is 1.5% higher than in the baseline.

However, the energy industry itself contracts, with oil exploration and related employment declining from mid-2017 through 2019. Oil production also falls somewhat during that time.

Oil prices begin to rise again in 2021, and as a result, overall real GDP growth 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 2027. 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.

Consensus ("CF") Scenario

This scenario is designed to incorporate the central tendency of a range of baseline forecasts produced by various institutions and professional economists. Since the result is itself a baseline, by definition the probability that the economy will perform better than this consensus is equal to the probability that it will perform worse.

The "Consensus" scenario is based on a review of publicly available baseline forecasts of the U.S. economy. These include the Congressional Budget Office (https://www.cbo.gov/publication/52370, January 2017); Social Security Administration (https://www.ssa.gov/OACT/TR/2016/2016_Long-Range_Economic_Assumptions.pdf, June 2016); Federal Open Market Committee members' range of forecasts (https://www.federalreserve.gov/monetarypolicy/fomcprojtabl20170315.htm, June 2017); Federal Reserve Comprehensive Capital Analysis and Review baseline (https://www.federalreserve.gov/newsevents/press/bcreg/20170203a.htm, February 2017); the European Commission U.S. baseline (http://ec.europa.eu/info/business-economy-euro/economic-performance-and-forecasts/economic-forecasts/winter-2017-economic-forecast_en, February 2017); U.K. Prudential Regulation Authority U.S. baseline (http://www.bankofengland.co.uk/financialstability/Pages/fpc/stresstest.aspx, March 2017); and Philadelphia Federal Reserve Survey of Professional Forecasters (https://www.philadelphiafed.org/research-and-data/real-time-center/survey-of-professional-forecasters/, May 2017).

The forecasts vary in date of latest vintage, number of updates per year, list of variables forecast, duration of forecast, frequency of data (quarterly or annual), and the number of respondents to a survey. For example, the SSA forecasts are annual averages and are published only once a year, in July. The CBO also forecasts annual averages, with its main projection in January and an update in August. The CBO projections extend through 2026 and contain detailed projections of federal outlays and revenues. The SSA outlook runs through 2089 and includes detailed demographic projections.

The Fed CCAR and PRA baselines are produced once a year and are of quarterly frequency. The former is produced in late January or early February and extends three years. The latter is produced in March and extends five years. These two baselines contain additional financial market detail. The EC projects annual averages and extends for only two years but has more expenditure detail and is published three times a year in February, May and November.

The summary of Federal Open Market Committee members' forecasts is in annual averages extending for three years and then one longer-run average. It is published four times a year in March, June, September and December, coinciding with the FOMC meeting at that time. The variables included are real GDP growth, the unemployment rate, personal consumption expenditure inflation (headline and core), and the federal funds rate.

The Philadelphia Federal Reserve Survey of Professional Forecasters publishes the range of a survey of 40 forecasters four times a year in February, May, August and November. The projections are quarterly frequency for five quarters, annual average data for four years, and some incomplete forecasts of longer-term average price inflation. The variables included are real GDP, major expenditure categories, CPI and PCE inflation, housing starts, several interest rates, industrial production, unemployment rate, payroll employment, corporate profits, and several house price indexes.

In the preparation of the Moody's Analytics consensus forecast, the focus is on annual averages for the next three years, since that is the most typical frequency and range. The approach is to give greater consideration to whatever forecasts were produced most recently since they will include the most up-to-date historical information. Likewise, the publication of new historical data since the time a particular forecast was prepared sometimes results in some forecast figures changing simply as a matter of arithmetic. This has been taken into account.

Some of the forecasts contain verbal guidance, and when similar themes are repeated, they are incorporated into the numbers. For example, a number of forecasts have emphasized the expectation of stronger growth in residential construction over the next couple of years.

Finally, users of the Moody's Analytics regional scenarios should note the following: The regional scenario associated with the consensus scenario is the result of running it through the regional model. In other words, the "consensus" for any state or metro area is not based on the review of publicly available state-specific forecasts.

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CONTACT US
For further information contact us at a location below:

U.S./CANADA
+1.866.275.3266

EMEA
+44.20.7772.5454 London
+420.224.222.929 Prague

ASIA/PACIFIC
+852.3551.3077

OTHER LOCATIONS
+1.610.235.5299

Email us: help@economy.com
Or visit us: www.economy.com

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