GUGGENHEIM

Macroeconomic and Investment Research

Forecasting the Next Recession

How Severe Will the Next Recession Be?

April 2019

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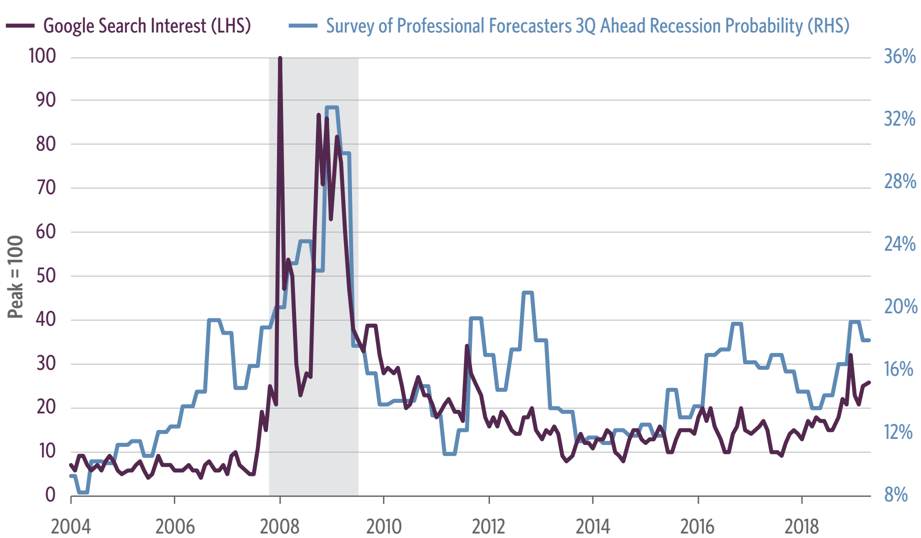
Recession Outlook Summary

- Our Recession Probability Model rose across all horizons in the first quarter of 2019 (see page 11). While near-term recession probability is limited, the probability of a recession occurring over the next 24 months has more than doubled.
- The deterioration in leading indicators, inversion of the yield curve, and tightening of monetary policy all contribute to rising recession risks. As we expect these trends to continue in 2019, we should see recession risk rise throughout the year.
- We maintain our view that the recession could begin as early as the first half of 2020, but will be watching for signs that the dovish pivot by the Federal Reserve (Fed) could extend the cycle.
- The next recession will not be as severe as the last one, but it could be more prolonged than usual because policymakers at home and abroad have limited tools to fight the downturn.
- Credit markets are likely to be hit harder than usual in the recession. This stems from the record high ratio of corporate debt to GDP and the likelihood of a massive fallen angel wave.
- When recessions hit, the magnitude of the associated bear market in stocks is driven by how high valuations were in the preceding bull market. Given that valuations reached elevated levels in this cycle, we expect a severe bear market of 40–50 percent in the next recession.

Recession Expectations Go Mainstream

Recession fears resurfaced at the end of 2018 as a combination of negative data surprises, communication blunders by the Fed, slowing growth overseas, and rising trade tensions triggered a selloff in risk assets that led many in the market to fear a recession was imminent. While more dovish Fed communication and the recent market rebound have helped allay these fears, many are still left wondering if a recession is around the next corner. We don't think so. Our recession forecasting tools continue to point to the same timing as they have over the past year and a half: recession risk in the near term is moderate, but the next recession could begin as early as the first half of 2020.

Recession Fears Have Mounted Recently



Source: Guggenheim Investments, Google Trends, Haver Analytics. Data as of 1.31.2019. Shaded area represents recession.

Our Recession Probability Model rose across all horizons in the first quarter of 2019 (see page 11). Near-term recession probability remains subdued, but over the next 24 months recession probability more than doubled compared to the third quarter reading. The deterioration in leading indicators, further flattening of the yield curve, and tightening of monetary policy all contributed to rising recession risks through the first quarter. As we expect these trends to continue and growth to weaken in 2019, we should see recession risk rise throughout the year.

Our Recession Dashboard also continues to point to a recession starting as early as the first half of 2020. The pace of decline in the unemployment rate is beginning to slow, with the unemployment rate holding steady, on net, over the last nine months. Past Fed rate increases and balance sheet runoff mean that monetary policy may already be tight enough to induce a recession. Yield curve flattening is now back in line with the average of prior cycles, with the three-month/10-year Treasury yield curve having inverted recently (see The Yield Curve Doesn't Lie for our analysis showing that the yield curve may not be unduly flat due to quantitative easing, but rather unduly steep due to outsized Treasury issuance). The strength of the Leading Economic Index has faded, putting it in line with the range of prior cycles. Hours worked and real retail sales have also cooled, and we expect these trends will continue this year as fading fiscal stimulus, tighter financial conditions, and rising policy uncertainty increasingly weigh on economic activity.

The Fed's recent dovish shift raises the possibility of a more extended business cycle, but at this point it has not changed our baseline recession forecast. The pause in rate hikes comes in the wake of weaker economic data both domestically and abroad, as well as financial conditions that have proven to be more sensitive to tightening monetary policy than they were earlier in the hiking cycle. Both factors could be signaling a lower short-run neutral rate than previously forecast. Uncertainty over the exact level of the terminal rate was a function of both inflation and the neutral rate estimate, but the current outlook is consistent with our longstanding view on the range for the terminal rate. Moreover, even if the Fed is done raising rates, the lagged impact of cumulative Fed hikes, balance sheet runoff and slowing QE abroad could continue to weigh on growth. Fiscal policy tailwinds also seem to have faded sooner than anticipated. Whether, and to what extent, Congress agrees to lift the federal spending caps for fiscal year 2020 in the third quarter will have important consequences for the growth outlook.

What Will the Next Recession Look Like?

Our Quantitative Approach Points to Average Severity

With our recession forecasting tools indicating the next U.S. recession will begin as early as the first half of 2020, we are now focused on what the recession will look like. Memories of the global financial crisis are still fresh in many people's minds, creating fears of another crisis when the economy enters a downturn. Our work shows that the next recession will not be as severe as the last one, but it could be more prolonged than usual because policymakers at home and abroad have limited tools to fight the downturn.

Recession severity can be defined a number of ways: either by focusing on the magnitude of the contraction (the peak to trough decline in real gross domestic product (GDP)), the size of the output gap (the difference between real GDP and potential output), the peak unemployment rate relative to the natural rate, or the length of time the recession lasts. We combined these four indicators to create a recession severity indicator that shows unsurprising results: the 2007–2009 recession was one of the worst of the post-war period, exceeded only by the "double dip" recession of 1980–1981. In contrast, the 2001 recession was mild by comparison.

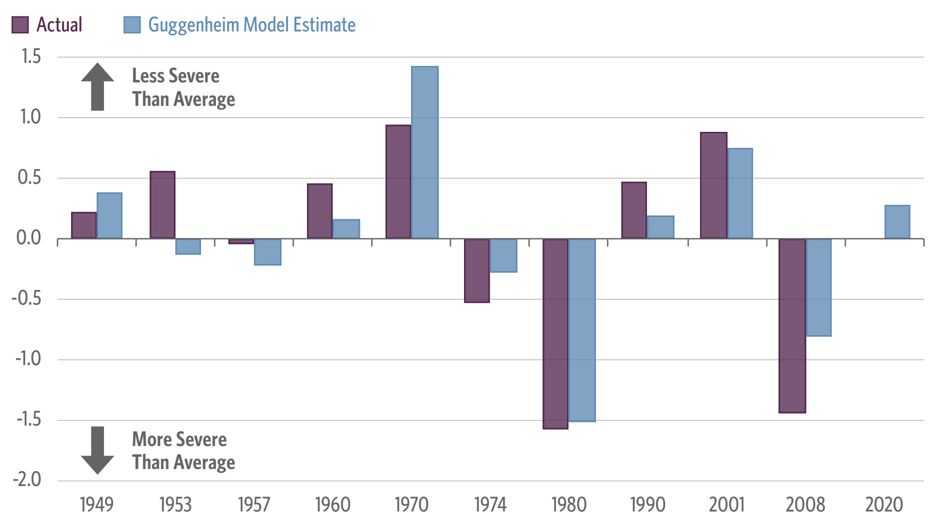
Several factors play a role in determining the severity of a recession. From a sectoral basis, an overheated housing market has a strong relationship with severe recessions, reflecting the fact that housing is the largest asset for most households and is closely tied to the banking system. A related factor is stress on the banking system, which also makes recessions worse. Beyond housing, overinvestment (as measured by the private capital stock relative to GDP) contributes to more severe downturns.

Other factors that can make recessions worse are monetary policy tightness (and degree of subsequent easing) and weaker global growth. Perhaps surprisingly, we find that neither the length nor the magnitude of an expansion seem to have a relationship with the severity of the subsequent contraction, a conclusion supported by recent research by the Cleveland Fed. Also contrary to conventional wisdom, there is not a straightforward relationship between debt levels and recession severity, whether debt is measured by sector or from a total economy perspective. This is likely due to debt cycles lasting longer than business cycles, as the negative effects of debt accumulation can sometimes be put off in a downturn as borrowers simply take on even more debt.

Our analysis of these factors indicates that the next recession should be about average. On the positive side, the housing market is not currently overheated, the banking system is sound, and the capital stock is only somewhat elevated. In addition, Fed policymakers will likely act more quickly in response to signs of a slowdown than in the prior cycles, as evidenced by the recent Fed reaction to weaker economic data.

Fundamentals Suggest the Severity of the Next Recession Will be Average

Guggenheim Recession Severity Indicator



Source: Guggenheim Investments, Haver Analytics. Data as of 12.31.2018. **Hypothetical Illustration.** The Recession Severity Indicator is a new model with no prior history of forecasting the severity of recessions. Actual results may vary significantly from the results shown.

Qualitative Factors Indicate Greater Downside Risks

On the negative side, we worry about the limited scope for policy response once the recession hits. From a monetary policy perspective, Fed policymakers will be unable to ease to the same degree that they have in previous recessions, as cumulative rate cuts have averaged 5.5 percentage points in past downturns. Even with another hike or two in this cycle, per the Fed's March 2019 Summary of Economic Projections, the Fed would have less than 3 percentage points of rate cuts available to combat the next recession.

The Fed Lacks Rate Cut Ammunition

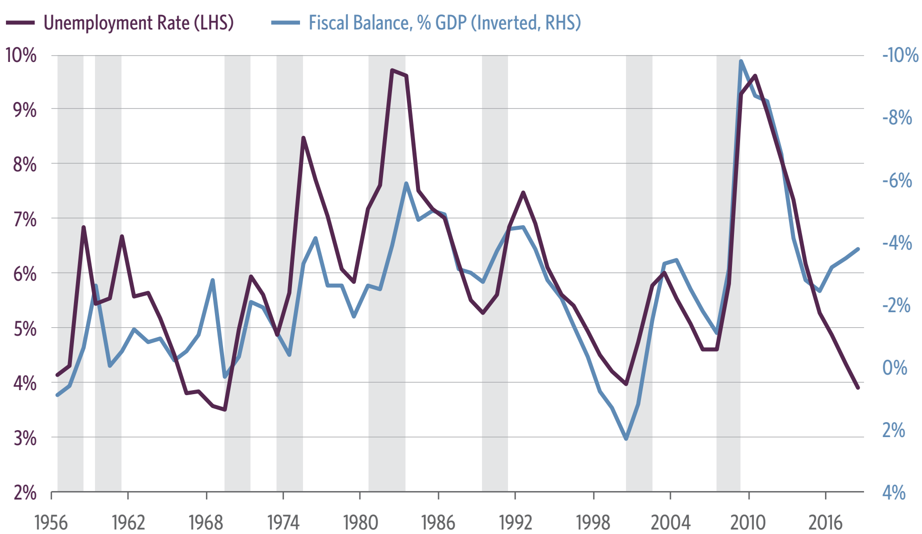
Change in Fed Funds Rate During Past Recessions, in Percentage Points*

Recession	Total Rate Cuts	Funds Rate Trough vs. Natural Rate
August 1957 - April 1958	-2.9	---
April 1960 - February 1961	-2.8	---
December 1969 - November 1970	-5.5	-5.0
November 1973 - March 1975	-7.7	-4.7
January 1980 - July 1980	-4.8	-1.6
July 1981 - November 1982	-10.4	-3.3
July 1990 - March 1991	-5.3	-3.6
March 2001 - November 2001	-4.8	-2.8
December 2007 - June 2009	-5.1	-3.2
Average	**-5.5**	**-3.5**

Source: Guggenheim Investments, BCA, Janet Yellen "The Federal Reserve's Monetary Policy Toolkit: Past, Present, and Future".

With limited room to cut rates, it is likely the Fed will again turn to unconventional policy tools, namely forward rate guidance and quantitative easing (QE). While another round of QE will undoubtedly provide some incremental stimulus, the efficacy of QE remains in question. QE could also again come under fire from politicians looking to blame the Fed for economic woes, which could limit the size or duration of future QE programs. Moreover, we expect problems to center on corporate credit markets in the next downturn, but unlike some other central banks, the Fed lacks statutory authority to buy corporate debt or loans. Policymakers are not likely

The Budget Deficit Has Less Room to Expand When the Downturn Hits



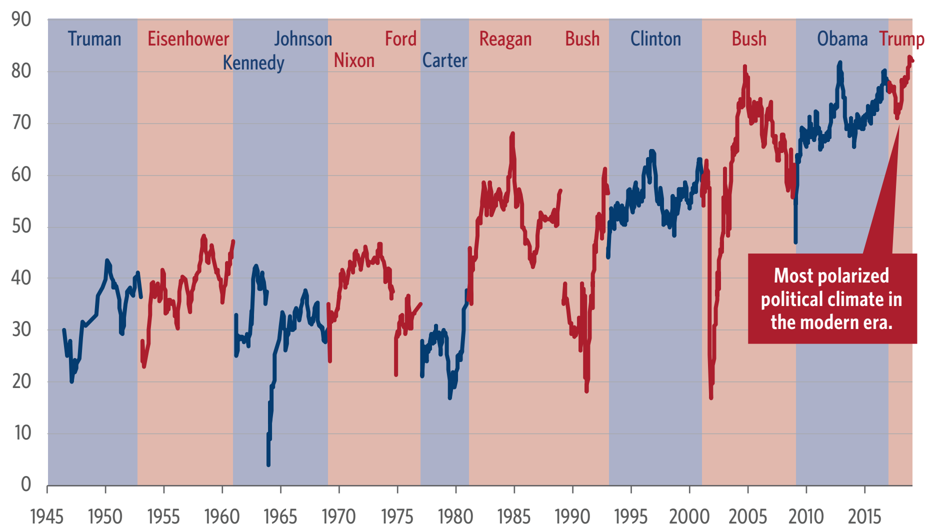
Source: Guggenheim Investments, Haver Analytics. Data as of 12.31.2018. Shaded areas represent periods of recession.

to seek—nor would we expect Congress to pass—changes to the Federal Reserve Act that would permit the Fed to buy corporates. With these limitations in mind, the Fed is embarking on a review of its policy framework in 2019. This review will explore, among other things, the possibility of adding additional tools to the toolkit. These could include a version of Japan's yield curve control policy and/or negative short-term rates, though both face hurdles to being deployed in the United States.

At the same time that monetary policy's ability to stimulate the economy is limited, we also worry that fiscal policy will be constrained. Typically, the fiscal balance is countercyclical, meaning that when economic times are good we have small deficits or even surpluses that allow us to run large deficits when recessions occur, in part due to automatic stabilizers, and in part due to discretionary stimulus. However, over the past few years this relationship has reversed, with deficits widening even as the economy has strengthened due to discretionary spending increases and tax cuts.

Political Polarization Could Impede Fiscal Policy Response

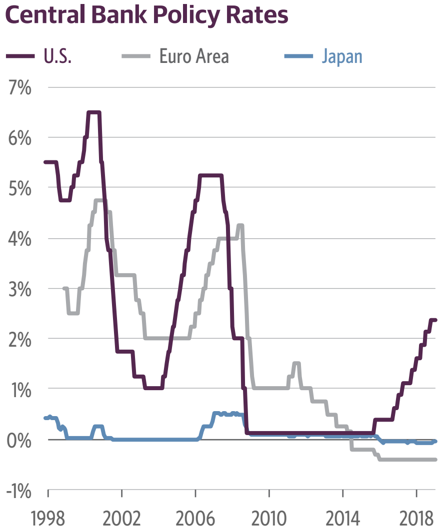
Presidential Approval: Spread Between President's Party and Opposition Party Voters

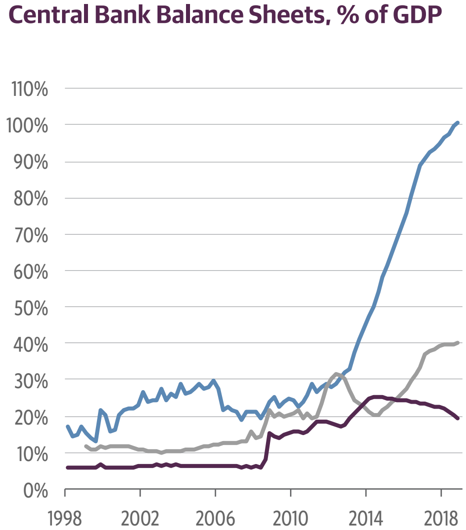


Source: Guggenheim Investments, Gallup. Data as of 2.8.2019. Blue shading denotes Democrat presidents, red shading denotes Republican presidents.

When the recession hits, the starting point for the federal deficit will likely be much worse than it typically is at the end of an expansion, raising the prospect that fiscal hawks will resurface to raise concerns about deficits and debt. Furthermore, our expectation for recession timing comes at a particularly challenging time in the political calendar given the presidential election in November 2020. If growth continues to slow, will the Democrat-controlled House really want to pass a spending bill that would stimulate the economy right before the election? We see significant obstacles to the bipartisan enactment of proactive fiscal policy measures, which is informed by our analysis of polling data that reveals a historically high degree of political polarization.

Monetary Policy Is More Constrained Overseas than in the United States





Source: Guggenheim Investments, Haver. Data as of 3.31.3019 for policy rates, 12.31.2018 for balance sheets.

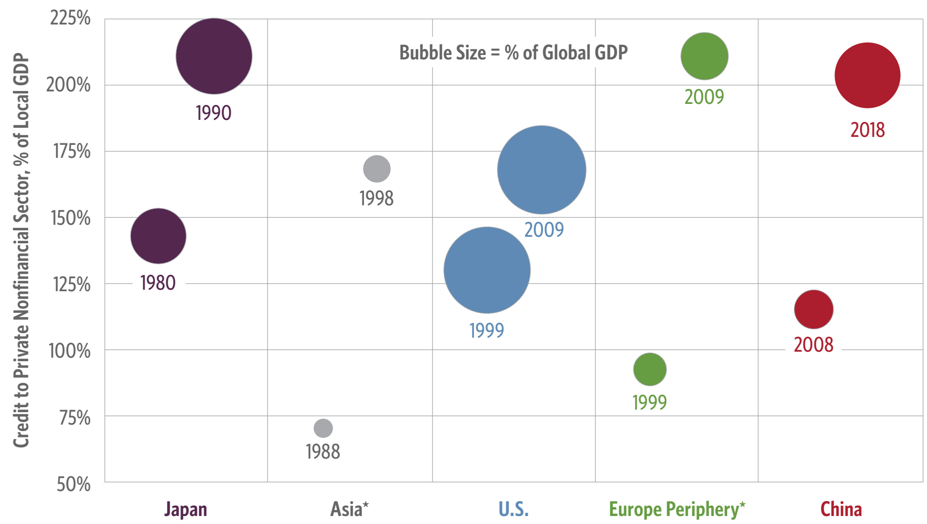
Policy space is even more limited overseas. As constrained as Fed policy is likely to be, the problem is much worse for the European Central Bank (ECB) and Bank of Japan (BOJ), where the starting point for inflation is lower, policy rates are still negative, and central bank balance sheets hold a much larger share of eligible assets. Given the Japanese yen's status as a global safe-haven asset, the BOJ faces an especially difficult challenge in fending off what will likely be a deflationary exchange rate appreciation, with fiscal policy unlikely to offer much support.

Nor is fiscal policy the answer in northern Europe, where austerian ideas still hold sway. In southern Europe, fiscal tools are limited as political pressure from the north and sovereign spread widening will likely force pro-cyclical belt-tightening measures. Meanwhile, the ECB will have limited ability to cushion the downturn. If politicians in Spain, Portugal, Greece and especially Italy are not able to deliver the fiscal tightening that markets will demand, then concerns about the viability of the eurozone are likely to resurface. Advanced economies are therefore likely to be mired in a protracted downturn, spilling back into the U.S. economy by way of weak export demand, tighter financial conditions and potential concerns about exposures to weaker foreign banks.

Additionally, during the last recession a major source of global stimulus was China's massive credit easing and infrastructure spending, without which the global recession would have been even more severe. China has, until recently, actively been working to deleverage its economy, where debt growth over the past 10 years has been on par with some of the biggest debt bubbles in history. When the global economy slows, Chinese policymakers are unlikely to deliver nearly as much stimulus as last time around, even if China manages to avoid a debt crisis or "hard landing" scenario. Other emerging markets (EM) are also unlikely to deliver the needed global stimulus, as balance of payments pressures in many EM countries will limit domestic policy space and force them to intervene in foreign exchange markets to avoid disorderly currency depreciations. This would reduce their net demand for U.S. Treasury and Agency securities, which could further complicate the Fed's ability to deliver an appropriate degree of monetary stimulus.

China's Debt Buildup Is Massive on Both a Local and Global Scale

Credit to the Private Nonfinancial Sector, % of GDP



Source: Guggenheim Investments, Haver Analytics. Data as of 9.30.2018. *Note: Asia includes Malaysia, Thailand, Korea, and Indonesia. Europe Periphery includes Greece, Italy, Ireland, Portugal, and Spain.

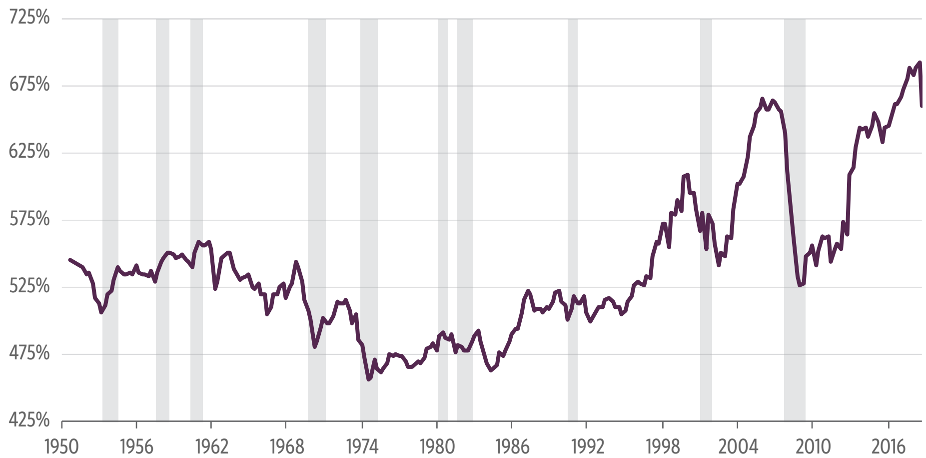
Taking these factors together, we anticipate a scenario where the magnitude of the decline in the U.S. economy is not especially severe when the recession hits, given the lack of major imbalances and relative soundness of the banking system. However, this downturn is likely to be more prolonged than usual, given the limited ability of policy to respond and the potential spillback from economic weakness abroad. The result could be a cycle that is more "U-shaped" than "V-shaped".

Investment Implications

Prepare for a Steep Decline in Risk Assets

On the surface, this scenario may not seem particularly dire for investors. But we would caution that market behavior is only loosely correlated with economic conditions, and a moderate recession does not mean moderate market movements. On the contrary, years of low interest rates have served to amplify the financial cycle over the past few decades, and this amplification has been further heightened in the current cycle by asset purchases by global central banks.

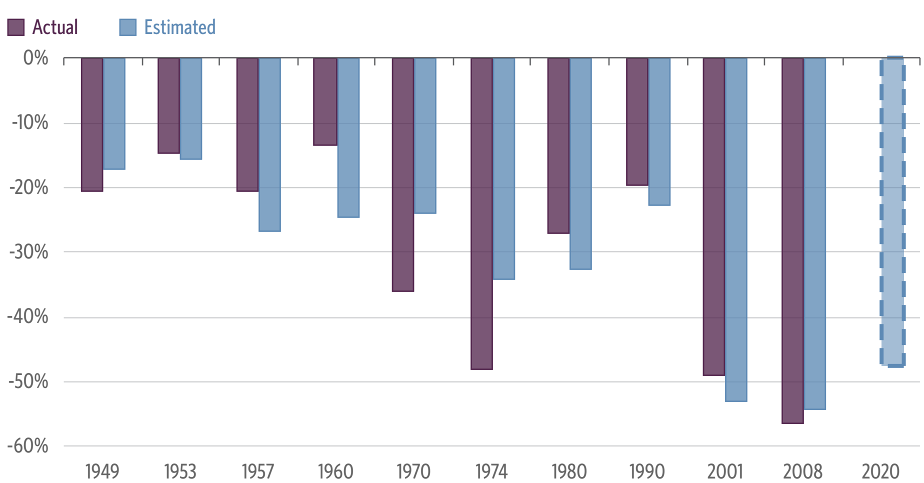
Low Rates Have Amplified the Financial Cycle in Recent Decades
Household Net Worth, % of Disposable Income



Source: Guggenheim Investments, Haver Analytics. Data as of 9.30.2018. Shaded areas represent periods of recession.

Our work shows that when recessions hit, the severity of the downturn has a relatively minor impact on the magnitude of the associated bear market in stocks. A far more important factor is how high valuations were in the preceding bull market. A good example is the 2001 recession, which was relatively modest economically, but saw one of the worst bear markets on record given the sky-high valuations of the tech bubble. Given that valuations reached elevated levels in this cycle, we expect a severe equity bear market of 40–50 percent in the next recession, consistent with our previous analysis that pointed to low expected returns over the next 10 years.

High Valuations Portend a Severe Bear Market in Stocks
S&P 500 Peak to Trough Decline in Recessions: Actual vs. Guggenheim Model Estimate

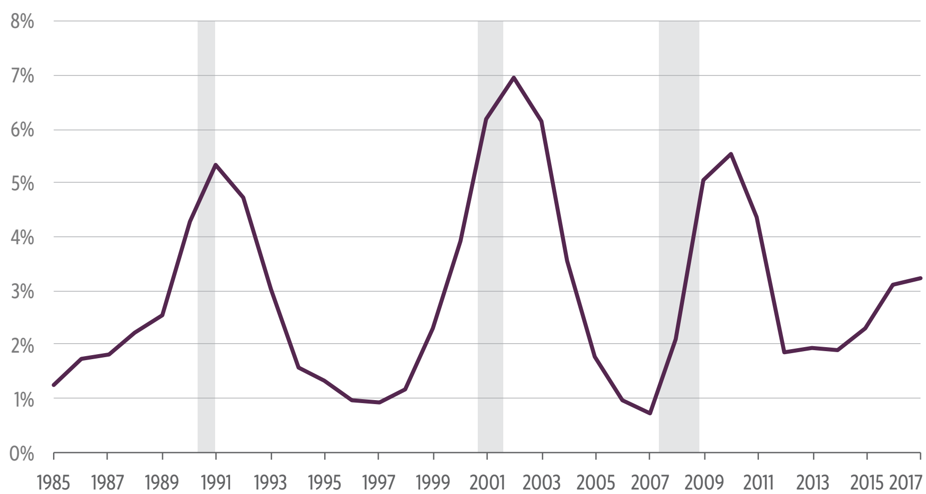


Source: Guggenheim Investments, Haver Analytics. Data as of 1.31.2019. **Hypothetical Illustration.** The Guggenheim model is a new model with no prior history of forecasting valuations. Actual results may vary significantly from the results shown.

Credit markets are also likely to be hit harder than usual in the recession. This stems from the record high ratio of corporate debt to GDP and the likelihood of a massive fallen angel wave that could cause forced selling in an environment where liquidity will already be poor. The 2001 recession offers a relevant case study, as cumulative corporate defaults and realized credit losses were greater than in 2008, which saw a much more severe recession and a higher peak in the annual default rate.

Credit Losses Were More Severe in 2001 Recession than 2008-2009

Cumulative Three-Year Credit Loss Rate



Source: Guggenheim Investments, Moody's. Data as of 12.31.2017. Shaded areas represent periods of recession.

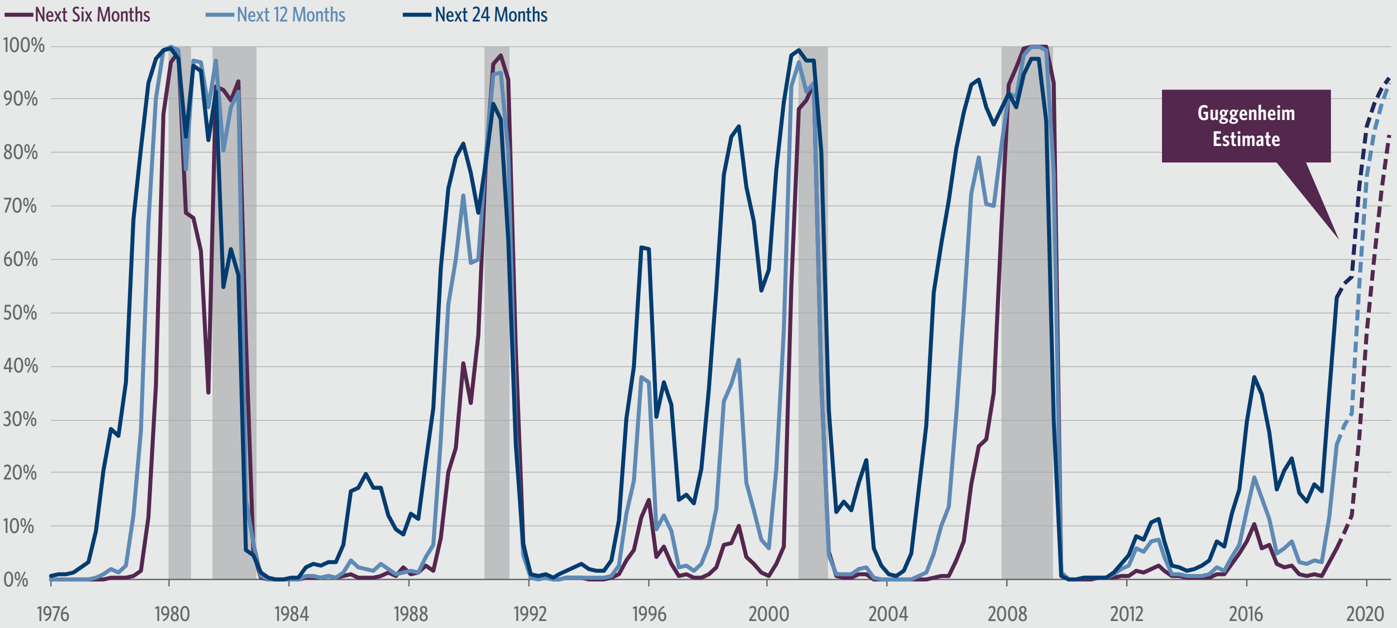
Given this historical lesson and the fact that the exits tend to shrink when investors need them most, we have been steadily upgrading portfolio credit quality and reducing spread duration in the lead up to the next recession. As noted in our first quarter 2019 Fixed-Income Outlook, the Fed's dovish pivot has supported risk assets, which affords us a window of opportunity to further recession-proof client portfolios. We will be looking to add rate duration this year given our view that policy rates will return to the zero lower bound during the upcoming recession.

Guggenheim Investments' Recession Probability Model

Our view that the next recession will begin as early as the first half of 2020. remains intact in the latest update of our Recession Dashboard and Recession Probability Model. Recession probability rose across all horizons in the first quarter of 2019, most notably in the 24-month timeframe. The Dashboard on the next page shows a loss of downward momentum in the unemployment rate, a flat yield curve, and slowing economic activity.

Recession Probability Model

Recession Risk Is Rising



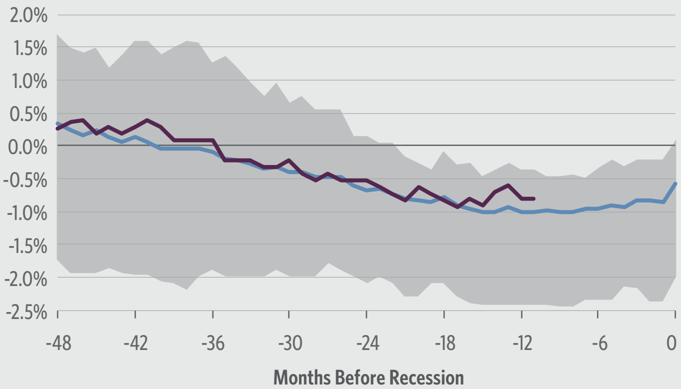
Hypothetical Illustration. The Recession Probability Model is a new model with no prior history of forecasting recessions. Actual results may vary significantly from the results shown. Source: Guggenheim Investments, Haver Analytics, Bloomberg. Data as of 3.31.3019. Shaded areas represent periods of recession.

Guggenheim Investments' Recession Dashboard

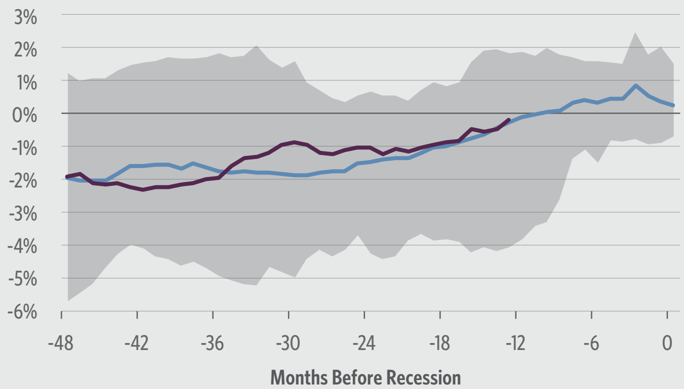
The six indicators in our Recession Dashboard have exhibited consistent cyclical behavior that can be tracked relatively well in real time. We compare these indicators during the last five cycles that are similar in length to the current one, overlaying the current cycle. Taken together, they suggest that the expansion still has room to run for approximately 12 more months.

Current Cycle   Average of Prior Cycles   Range of Prior Cycles

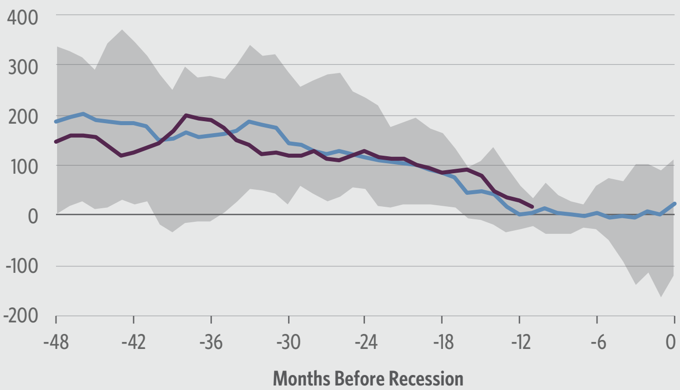
Unemployment Gap (Unemployment Rate–Natural Rate of Unemployment)



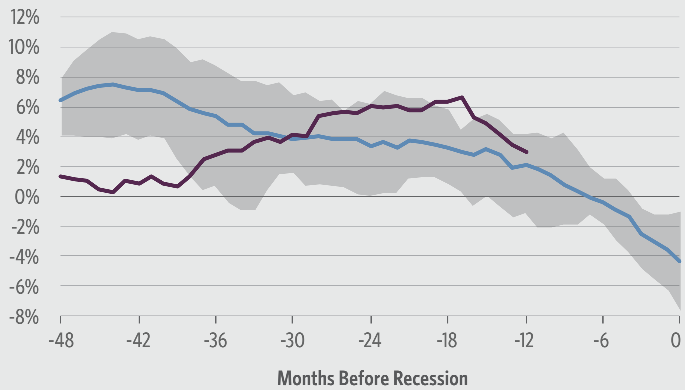
Real Fed Funds Rate–Natural Rate of Interest (r*)



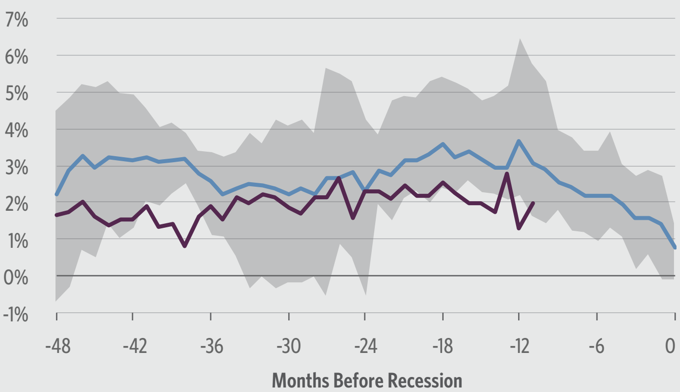
Three-Month/10-Year Treasury Yield Curve (Basis Points)



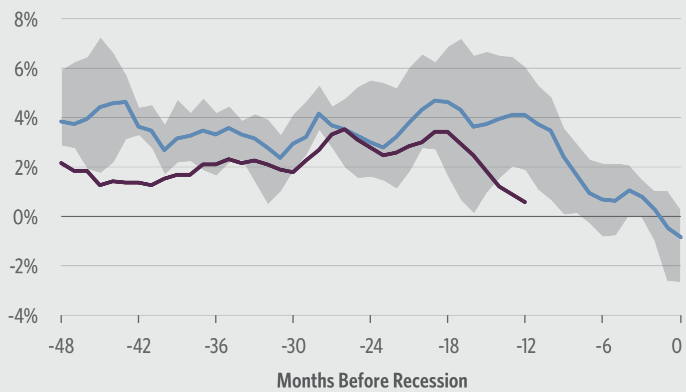
Leading Economic Index, YoY % Change



Aggregate Weekly Hours Worked, YoY % Change



Real Retail Sales, YoY % Change



Source all charts: Haver Analytics, Bloomberg, Guggenheim Investments. Data as of 1.31.2019 for real fed funds, 02.28.2019 for LEI and retail sales, 3.31.2019 for unemployment, yield curve, and aggregate hours. Includes cycles ending in 1970, 1980, 1990, 2001, and 2007. Past performance does not guarantee future results.

Important Notices and Disclosures

Investing involves risk, including the possible loss of principal.

One basis point is equal to 0.01 percent.

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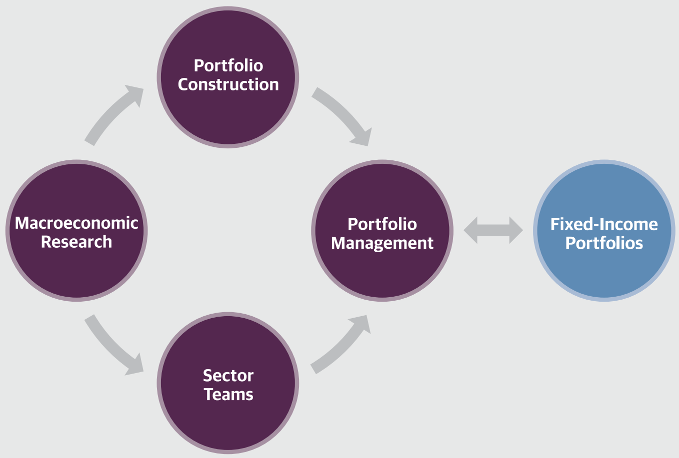
Guggenheim's Investment Process

Guggenheim's fixed-income portfolios are managed by a systematic, disciplined investment process designed to mitigate behavioral biases and lead to better decision-making. Our investment process is structured to allow our best research and ideas across specialized teams to be brought together and expressed in actively managed portfolios. We disaggregated fixed-income investment management into four primary and independent functions—Macroeconomic Research, Sector Teams, Portfolio Construction, and Portfolio Management—that work together to deliver a predictable, scalable, and repeatable process. Our pursuit of compelling risk-adjusted return opportunities typically results in asset allocations that differ significantly from broadly followed benchmarks.



Guggenheim Investments

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Guggenheim Partners

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