Survive and Thrive

Robustness, Flexibility and Opportunism in Late-Cycle Investing

Market participants are beginning to think about when and how the current, exceptionally long business cycle will end. We think that the late stages of any business cycle present investors with a challenge. However, the way we believe this particular cycle is likely to mature could make it uniquely difficult. Here, we try to map the economic and market landscape of the coming years, and describe four principles that may help investors survive and thrive as they work their way through it.

NEUBERGER | BERMAN

"Making portfolios robust against the volatility of the cycle ("surviving") is also about maintaining the ability to pick up value opportunities that look through the cycle ("thriving"). In our view, successful late-cycle investing is about getting back to basics. If you are able to pursue your portfolio strategy during this period, you are more likely to be on surer ground whatever stage of the cycle we are in."

Final Thoughts… *page 28*

"If the history of recent U.S. recessions shows that inflation shocks, energy shocks and inventory imbalances are things of the past, it also suggests that financial imbalances and asset bubbles have become more impactful since the 1990s."

Overview… *page 8*

JOSEPH V. AMATO
PRESIDENT AND CHIEF INVESTMENT OFFICER—EQUITIES

"When it is not clear whether investors should be overweight or underweight equities, credit or government bonds, the obvious conclusion is that they should try to maintain genuine balance and diversification—which means a thorough re-assessment of how diversification is achieved in strategic asset allocation."

Re-Assess Strategic Asset Allocation… *page 16*

ERIK L. KNUTZEN, CFA, CAIA
CHIEF INVESTMENT OFFICER—MULTI-ASSET CLASS

"The start of 2016 came as general bad news on China and oil prices coincided with perceived warning signals from widening credit spreads and equity market volatility. As financial markets flashed recession signals, more investors tried to sell into illiquid markets, and the signals flashed more urgently. Three years later, it is clear that this was noise."

Distinguish Signals from Noise… *page 12*

BRAD TANK
CHIEF INVESTMENT OFFICER—FIXED INCOME

Executive Summary

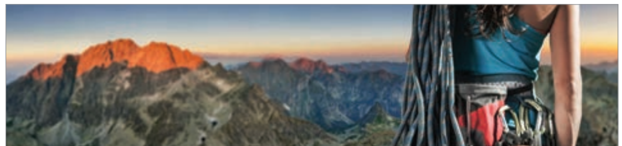
Overview

- Market participants are beginning to think about when and how the current, exceptionally long business cycle will end.
- We think that the late stages of any business cycle present investors with a challenge, and the way we believe this particular cycle is likely to mature could make it uniquely difficult.
- Here, we try to map the economic and market landscape of the coming years, and describe four principles that may help investors survive and thrive as they work their way through it:
  - Why Is Late-Cycle Investing So Challenging?
  - Why Might the Late Stage of This Cycle Be Especially Challenging?
  - The Next Downturn May Be Longer But Shallower
  - The Challenge of Amplified Market Volatility—And a Recession That May Never Come

The Four Principles

① Distinguish Signals from Noise

- How can investors tell when late-cycle is turning over into end-cycle? There are two places to look: at data coming from the real economy; and at indicators from financial markets.
  - In QE-Distorted, Illiquid Markets, Price-Based Economic Indicators Are Compromised
  - Fundamental Economic Indicators Are Mostly Green Lights
  - Corporate Leverage May Be a Yellow Light
  - China Bears Close Scrutiny



② Re-Assess Strategic Asset Allocation

- The fundamental late-cycle investing challenge is to maintain exposure to growth potential without losing control of overall portfolio risk.
- Using equity rallies to rotate into government bonds, which have tended to enter the late stage of a cycle with high yields, is unlikely to work this time around.
  - Low Bond Yields Require Investors to Re-think Diversification
  - Diversifying Genuinely, Not Cosmetically
  - Diversifying Across Regions and Investment Styles
  - Diversifying Onto Less Crowded Paths

③ Identify Through-Cycle Themes

- One way of dealing with cyclical investment challenges is to look for investments whose performance is not primarily determined by the business cycle, or whose dynamics supersede or “look through” that cycle.
  - Emerging Markets Are Navigating Their Own Mega-Cycles
  - Thematic Investments Can Deliver Idiosyncratic Risk and Resilient Earnings Growth

④ Be Prepared to Provide Market Liquidity

- The next downturn will be the first since the financial crisis of 2008–09. That is significant, because a post-crisis wave of regulation has left the structure of the financial market very different than it was going into previous recessions.
- Illiquidity poses risks, but may also generate opportunity.
  - Market Liquidity Has Diminished
  - Maintaining a Liquid Portfolio Component and a Bias Toward High Cash-Flow Strategies
  - With Nimble Opportunism, Liquidity Providers May Be Able to Benefit From Volatile and Gapping Markets

Overview

Investors' Minds Have Turned to the End of This Cycle

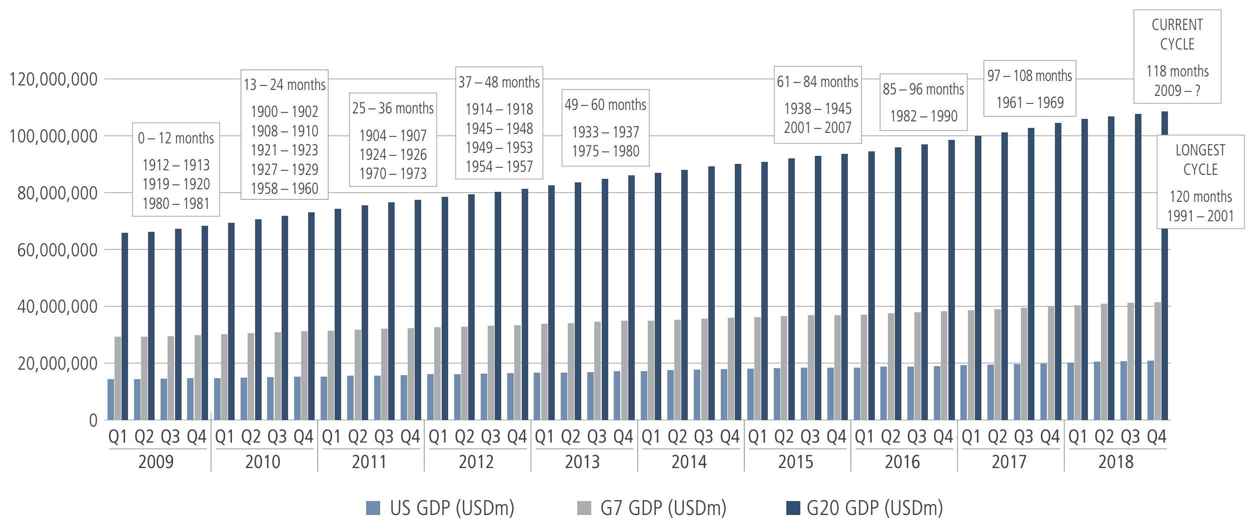
After a positive year for risk assets in 2017, which saw synchronized growth in all regions of the world paired with steadily declining market volatility, 2018 was an altogether more challenging prospect for investors. Volatility returned, and throughout the year it struck in different markets for different reasons. In the final quarter, however, tightening financial conditions and the constant drip of disappointing economic data out of China and Europe tipped the sentiment scales more decisively, leading to a generalized sell-off across risk assets.

The current business cycle has had its share of ups and downs since it began in the second quarter of 2009, including three major bouts of risk aversion during the 2011 euro zone crisis, the 2013 "Taper Tantrum" and the 2015 oil and China equities crash. However, 2018 was the first time that a large number of investors started asking how and when the cycle might end. The question has taken on greater urgency in 2019 as closely watched yield curves have inverted and we come within weeks of confirming this as the longest U.S. economic expansion in modern history.

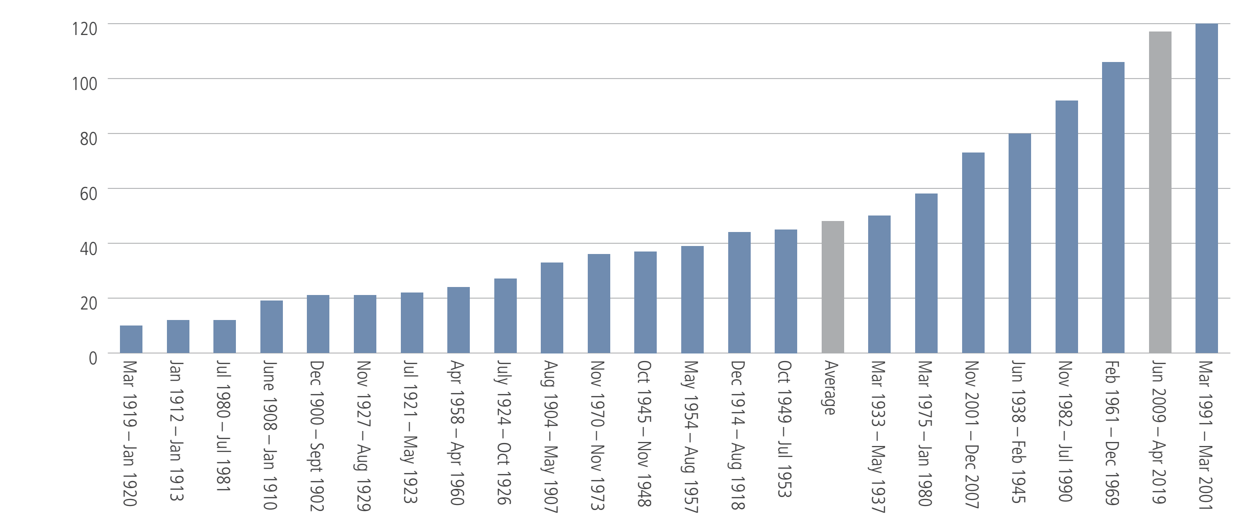
For our part at Neuberger Berman, we believe that current monetary and fiscal stimulus will be enough to mitigate any immediate catalyst for recession, in the U.S. or globally. We believe this cycle may have another 18–24 months' life in it yet, and potentially even more. But the fact that a critical mass of investors is now thinking about that turn in the cycle is likely to consolidate a shift from mid-cycle to late-cycle market dynamics.

Figure 1. Will the current cycle become the longest in modern U.S. history?

Annual GDP during the current U.S. expansion, marked with the respective lengths of previous expansions



U.S. economic expansions since 1900, ranked by length in months



Source: National Bureau of Economic Research, OECD. Data as of Q4 2018 (top) and April 2019 (bottom).

Why Is Late-Cycle Investing So Challenging?

In our view, that means we are currently in one of the most challenging stages of the cycle. When you know that a cycle is turning over, when credit defaults are rising and earnings are declining, positioning portfolios is often relatively straightforward: underweights in risk assets such as equities and credit make sense, balanced with an overweight in safe-haven assets such as government bonds. As the cycle picks up again, cautious additions of credit may be warranted, such as adding corporate risk, but high in capital structures and with fixed coupons. Once the recovery is bedded-in, it may be an opportune time to seek to ride the mid-cycle wave with overweights in all types of risk assets.

Figure 2. Late-cycle: The most challenging stage of the business cycle

The dynamics of a typical cycle. Every cycle is different and it is not a given that all of the described conditions will prevail at the same time. In our view, we are currently transitioning between mid- and late-cycle, with different conditions prevailing in different markets and regions.

Late-Cycle

Rising competition progressively leads to lower-quality earnings. Equity gains are maintained via acquisitions and share buybacks, and therefore deteriorating balance sheets. Fiscal and monetary policy is at its tightest.

MARKET CONDITIONS		PORTFOLIO POSITION	
EQUITY VALUATIONS	Full & Rising	EQUITIES	Overweight (... but tilted to growth/ quality)
CREDIT SPREADS	Tight	CREDIT	Underweight (... but look to earn illiquidity premia and high cash flows)
BOND CURVES	High & Flat	BONDS	Underweight (... as yields are lower than in past cycles)
VOLATILITY	High	HEDGE FUNDS & UNCORRELATED	Overweight (... but focus on genuinely uncorrelated strategies)

End-Cycle

Earnings growth rolls over and companies encounter difficulties servicing the debt they have taken on. Fiscal and monetary policy begins to loosen. Equity risk underweight, and tilted to quality/defensive.

MARKET CONDITIONS		PORTFOLIO POSITION	
EQUITY VALUATIONS	High & Falling	EQUITIES	Underweight
CREDIT SPREADS	Tight & Widening	CREDIT	Underweight
BOND CURVES	Falling, Steepening	BONDS	Overweight
VOLATILITY	High & Rising	HEDGE FUNDS & UNCORRELATED	Neutral

Mid-Cycle

Corporate restructuring begins to yield an earnings recovery. Fiscal and monetary policy stabilizes and begins to tighten. Equity risk overweight, tilted to growth/cyclical.

MARKET CONDITIONS		PORTFOLIO POSITION	
EQUITY VALUATIONS	Low & Rising	EQUITIES	Overweight
CREDIT SPREADS	Normal & Tightening	CREDIT	Overweight
BOND CURVES	Rising, Steep & Flattening	BONDS	Underweight
VOLATILITY	Normal & Falling	HEDGE FUNDS & UNCORRELATED	Neutral

Early-Cycle

Intense restructuring within companies to reduce debt burdens: selling assets, cutting dividends, raising equity. Credit risk falls rapidly but earnings remain low and equity is diluted. Fiscal and monetary policy is at its loosest. Equity risk neutral, but tilted to value/cyclical.

MARKET CONDITIONS		PORTFOLIO POSITION	
EQUITY VALUATIONS	Low & Stabilizing	EQUITIES	Neutral
CREDIT SPREADS	Wide & Tightening	CREDIT	Overweight
BOND CURVES	Low, Steep & Stabilizing	BONDS	Overweight
VOLATILITY	High & Falling	HEDGE FUNDS & UNCORRELATED	Neutral

Source: Neuberger Berman. Overweight and underweight positioning views reflect sample positioning ideas and are for illustrative purposes only. See end disclosures for additional information regarding the Neuberger Berman Multi-Asset Class team and Asset Allocation Committee views expressed.

But when the market starts to anticipate the next downturn, in our view it does not necessarily pay to beat the rush by adopting an underweight in risk assets. While the late stage of the cycle is a time of corporate balance-sheet deterioration, that buildup of leverage can propel a final burst of earnings expansion. Mature cycles have often been characterized by a late surge in equity and credit markets, and missing out can compromise long-term performance—think about the impressive bounce-back we saw in the first quarter of 2019. U.S. large-cap stocks appreciated by more than 40% in the 12 months before the Stock Market Crash of 1929. Since 1900, 14 of the 22 U.S. recessions have been preceded by a positive large-cap equity 12-month return, and seven by a double-digit return.

At the same time these market dynamics not only tend to generate a great deal of volatility, but also cause bouts of strong correlation between equity and bond performance, making it increasingly difficult to manage overall portfolio risk. Alternative investments such as hedge funds or alternative risk premia strategies can help with this—but that merely reinforces the message that the direction for traditional assets is radically uncertain and the need for nimbleness, tactical trading and flexibility is paramount.

The fundamental late-cycle investing challenge is, therefore, to maintain exposure to growth without losing control of overall portfolio risk.

Why Might the Late Stage of This Cycle Be Especially Challenging?

We think this challenge could be especially acute in the mature stage of the current cycle. One reason is that, whereas government bond yields have tended to be high during the late stages of past cycles, a decade of central bank intervention and concerns about long-term growth and inflation have left them low or even negative. The more cautious investor therefore has no obvious place to go when they underweight their equity allocation.

But there is more to it than that, and to understand why, it helps to think about how the turn in this cycle is likely to play out, and why it may look different to previous recessions. In short, we believe it is likely to be longer but shallower: the slowdown may be less severe but the recovery may be much slower and weaker. That has important implications for market dynamics in the lead-up to that downturn.

The Next Downturn May Be Longer

In the short recession of 2001, U.S. economic growth barely saw negative numbers. In the early 1990s, it went from +4.4% to -3.6% and back to 3.2% over the course of six quarters, inclusive. In the early 1980s, it plunged to -7.5% and back to +7.5% over three quarters. The mid-1970s recession saw a similar round-trip over eight quarters, and the late-1950s recession went from +4% to -10% and back to +10% over five quarters. Even the financial crisis and Great Recession of 2008–09 was an exaggerated, bigger-and-badder variation on this V shape, which saw U.S. growth go from 2–3% down to -8% and back to 4% over eight quarters.

Two things happened during these recessions. First, the economy endured a severe shock from one of four sources, which we will describe in more detail later: inflation, energy supply, manufacturing-sector inventory imbalances or financial imbalances. Second, the economy recovered thanks to meaningful fiscal and monetary-policy interventions from government and the central bank, which replaced some lost private-sector demand and cut interest rates to help stimulate the housing and mortgage markets, underpinning a restoration of consumer and business sentiment.

Deeper *Insight*

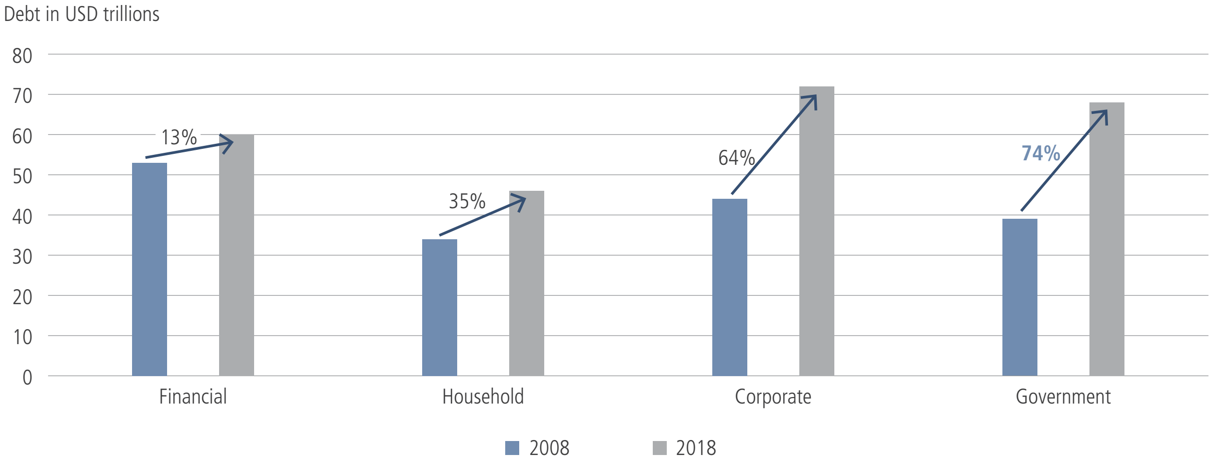
"We believe the coming recession and subsequent recovery period will likely be U-shaped and that a persistently weak economic recovery will result in an extended period of corporate downgrades and defaults."

"Fixed Income Investment Outlook 4Q 2018: U Turn"

"… extraordinary monetary policy… moving debt from the private sector to government balance sheets, a substantial public-sector fiscal stimulus, and an overhaul of swaths of banking and financial market regulation…. these phenomena, together with lingering questions about the sustainability of pre-crisis growth rates, could add up to substantial headwinds to economic growth and investment returns."

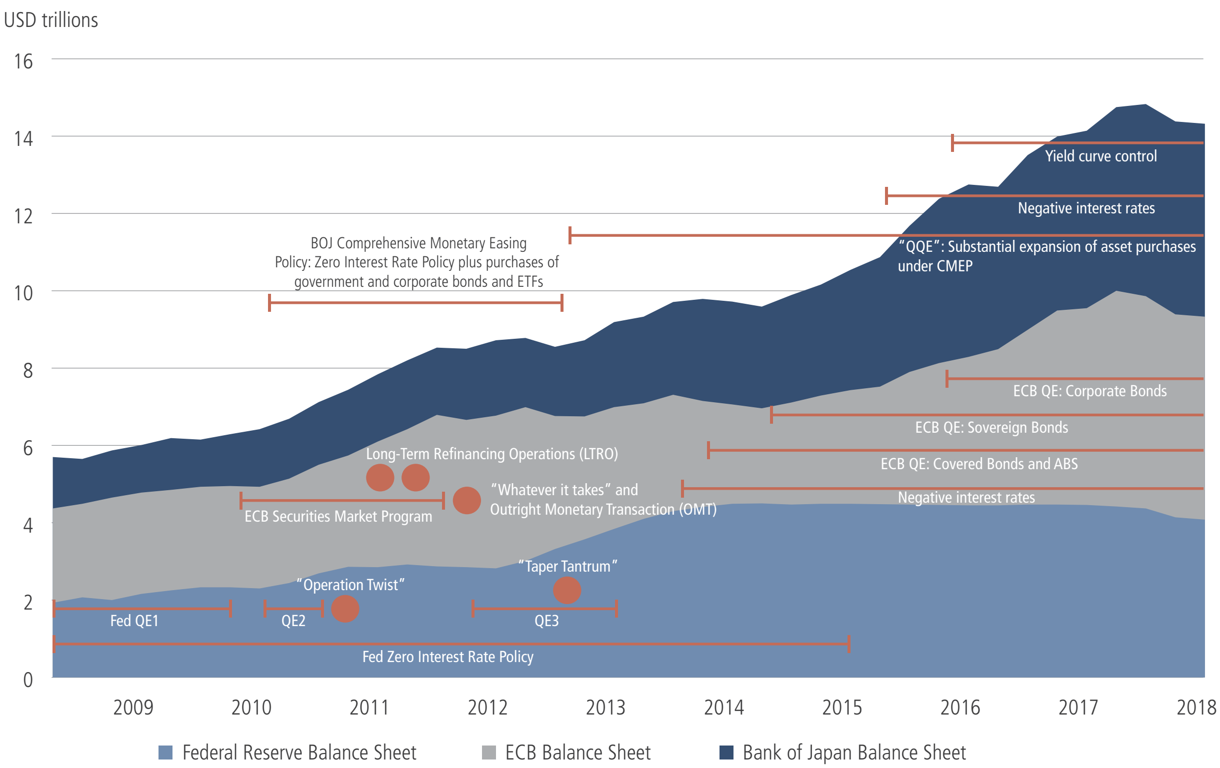
"2008–2018–2028—The Dissolving Divides That Will Shape the Post-Crisis Investment Era: Government/Market"

Figure 3. Governments and central banks have less scope to apply stimulus in the next downturn



Source: Bank of America Merrill Lynch. Data as of Dec. 31, 2018.

The major central banks still have large balance sheets and, outside the U.S., emergency policies in place



Source: Federal Reserve, ECB, Bank of Japan. Data as of Dec. 31, 2018.

Next time around, there may be two contradictory forces at work: on the one hand, during the past two recessions central banks have shown increasing willingness and capacity to intervene to curtail meaningful economic downturns; on the other, the capacity for a fiscal, monetary or mortgage-finance stimulus may be limited.

The Federal Reserve estimates that the terminal Fed Funds rate for this cycle will be 2.75%, which is much lower than the 5%-plus levels it has reached on the eve of previous recessions, leaving less of a cushion above the zero bound. Moreover, after a decade of extraordinary policy interventions, from quantitative easing to negative rates, central banks will need to do much more to surprise markets and boost sentiment during the next slowdown. That long period of low interest rates has enabled most homeowners who are able to refinance their mortgages to do so already, removing what has been a powerful source of stimulus in previous downturns. After assuming so much of the balance-sheet damage incurred by the banking and consumer sectors during the financial crisis, the scope for a fiscal stimulus from government is also likely to be limited, too. In the U.S., for example, $2 trillion of debt has been added to the government balance sheet in the past 18 months alone, while the Federal budget deficit has increased from 3.5% to 3.8% of GDP, stimulus that is helping to extend the cycle while simultaneously constraining the potential fiscal response to the next downturn.

We think the next downturn could be longer-lasting, therefore, because it's not obvious that we have the tools to fight it.

The Next Downturn May Be Shallower

While we anticipate a longer downturn than usual, we also think it could be shallower. In fact, rather than asking when the next recession is likely to arrive, it might be better to ask whether it will arrive at all. That is partly because of the willingness of central banks and government to intervene much earlier and more strongly in response to signs of stress than in the past, perhaps due to the realization that they have weaker tools with which to address a more severe downturn. Witness the actions of the Federal Reserve and the European Central Bank in response to minor market volatility during the first quarter of 2019, and the fact that the U.S. has been expanding its deficit at a stage when it would have been tightening it in previous cycles.

But our anticipation of a shallower downturn also owes a lot to structural changes in developed economies. We think the causes of the last dozen or so recessions in the U.S. economy can be grouped into four categories.

The first category is **inflation shocks**. An inflation shock can cause a recession or sharp slowdown by forcing central banks to tighten monetary policy rapidly, which can have the unintended consequence of draining the economy of liquidity and suppressing confidence. In the U.S. these dynamics were at play not only in 1980–82, when Fed Chair Paul Volcker set about slaying the inflation dragon of the 1970s, but also in 1953–54, 1960–61 and 1969–70.

We acknowledge that the near-term risk of worsening trade disputes that result in higher tariffs and other impediments to cross-border supply chains could deliver an inflation shock to the economy, but it is not our central scenario. We also believe that higher and rising inflation could be a feature of the next few years. Overall, however, structural trends such as globalizing supply chains and labor markets, demographic aging, automation and the growth of lower-paid services employment are likely to continue to make the economy less susceptible to inflation shocks, as they have over the past two decades.

The second category is that of **energy shocks**. In these scenarios, an interruption in supply of a key commodity pushes up input prices for manufacturers, and ultimately consumer prices, leading to a temporary fall in demand and sometimes a broader inflation shock. In the U.S., this category would include the 1973–75 recession, when OPEC quadrupled its crude oil price, and that of 1981–82, when the energy crisis sparked by the 1979 Iranian Revolution added to already high inflation, which was finally curbed by the Volcker rate hikes.

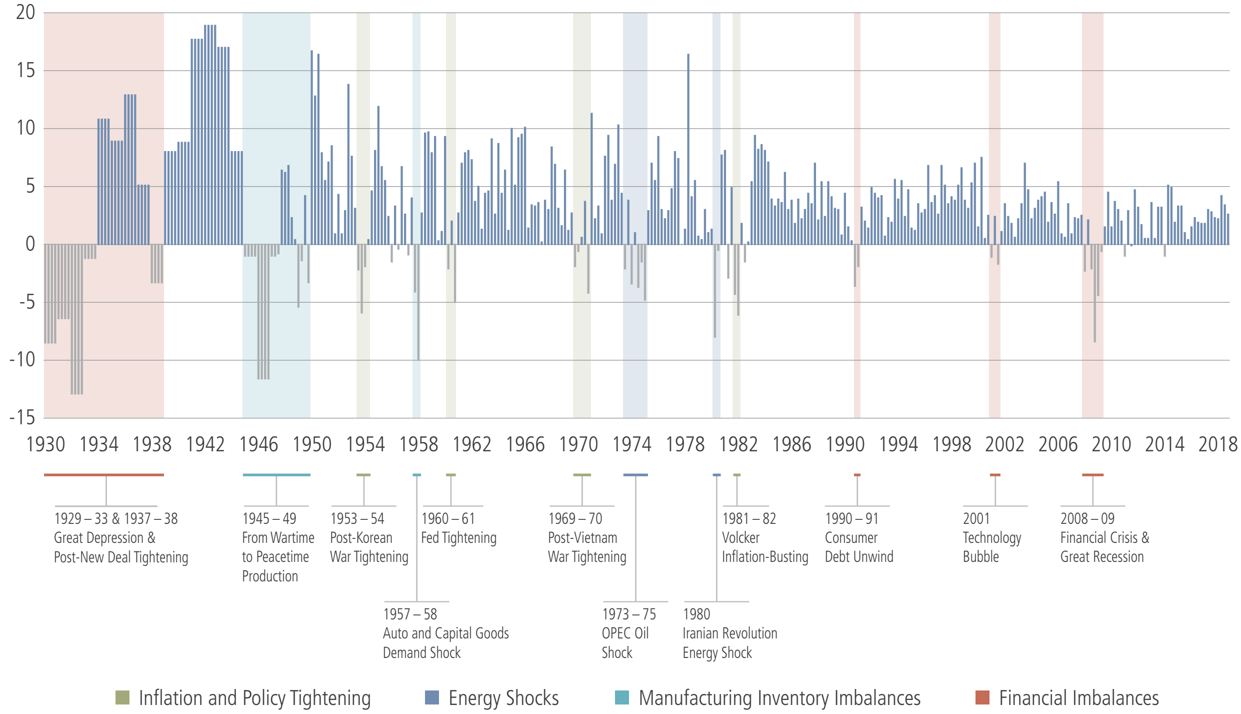
In our view, energy shocks look increasingly unlikely in a world that relies much less on OPEC countries for its energy, due to advances in the production of shale oil and gas and the growing importance of renewables. We believe there are structural reasons why the U.S. experienced all of its inflation- and energy-shock recessions between 1950 and 1980.

The third category of recession catalyst is manufacturing-sector **inventory imbalances**. These occur when reduced demand leaves manufacturing companies with excess stock, forcing them to cut back production and labor and feed into a vicious cycle of falling demand.

In addition to the recessions of 1945 and 1948–49, caused by the shift from wartime to peacetime industrial production, this dynamic was behind the downturn of 1957–58, which was preceded by demand shocks in the autos and capital goods sectors. The U.S. has not seen anything similar for 60 years, and in our view the development of just-in-time inventory management and flexible labor markets have made these kinds of recession less likely.

Figure 4. The four drivers of recent U.S. recessions

U.S. GDP growth (%)



Source: Bureau of Economic Analysis, Neuberger Berman. Annualized growth rate. Annual data for 1930 – 1946, quarterly data for 1947 – 2018.

If our chart showing the history of recent U.S. recessions shows that inflation shocks, energy shocks and inventory imbalances are things of the past, however, it also suggests that our fourth category of recession catalyst, **financial imbalances** and asset bubbles, has become more impactful since the 1990s, after a 50-year break following the Stock Market Crash and Great Depression of the 1930s.

We suspect the two things may be related. Many of the structural changes that have made inflation-shock, energy-shock and inventory-imbalance recessions less likely, combined with a lower overall rate of economic growth in the major industrial economies, have helped to smooth out and extend recent business cycles. Of the six longest economic expansions in recent U.S. history, four have occurred since the 1980s. Generally, the longer an economy grows, and the lower the level of unemployment falls, the more comfortable governments, corporations and consumers tend to become in taking on debt and the more tolerant lenders and investors tend to become of risk. It is notable that equity markets historically peaked between three and six quarters before the peak in GDP, employment and corporate earnings growth until the downturns of 2001 and 2008 – 09, when equity markets anticipated the peak in economic data by mere weeks. That is perhaps an indication that today's business cycles end only when they have created unsustainable bubbles or financial imbalances.

Deeper *Insight*

"We expect moderate U.S. growth—around the 2% level—as a nascent slowdown in economically sensitive sectors like automobiles and housing coupled with a lack of acceleration in capital spending likely will be tempered by stable consumer spending and a cautious Fed."

"Fixed Income Investment Outlook 1Q 2019: Prepare for (Soft) Landing"

Amplified Market Volatility—And a Recession That May Never Come

We have arguably never seen a more extreme example of this than we do today: corporate and government debt is much bigger than it was before the financial crisis; despite this, market implied volatility measures have recently touched all-time lows, stock markets are near all-time highs, credit spreads near all-time tights and government bond yields are near all-time lows—in some cases even negative.

While debt levels bear watching, however, we would not want to overstate their significance. We would also note the clearest recession risks are near-term risks. In the euro zone, interest rates are set to be at or near zero well into 2021, imbalances between "core" and "periphery" economies have proven stubbornly persistent, and there is a lot of exposure to the global growth slowdown led by China. In China itself, corporate and government debt levels have increased, and authorities have been treading a fine line between deleveraging the economy and stalling it. Should the coming months pass without either of these two catalysts triggering a recession, however, it is difficult to discern similar catalysts in 2020 or even 2021.

This is the central scenario that lies behind our expectations for an extension of, and a shallower end to this cycle. China's policymakers appear to have engineered a soft landing with their recent additions to monetary policy and fiscal stimulus. We envisage a managed global slowdown as this begins to feed into domestic demand and global sentiment, and as the major developed-world central banks take a cautious and conservative approach to unwinding their post-crisis interventions and returning to neutral interest rates. They will do so undisturbed by the traditional end-cycle problems of soaring inflation, volatile energy prices or industrial overproduction, but also constrained from stimulating a return to 2017-level growth.

While slow growth is better than no growth, however, it can still uncover problems in an economy riven by so many large financial imbalances: simply put, debt-to-GDP and debt-to-EBITDA ratios that look manageable at 2% growth can begin to look unstable at 1.5% growth. That, against a background of fragmented, computer- and momentum-driven liquidity provision across financial markets, is why the slowdown has already led to higher market volatility and will likely continue to do so. But it also creates the background risk of a financial shock severe enough to turn a soft landing into a full recession. And the longer a business cycle extends, the more severe any financial shock is likely to be.

As a result, we argue that the fundamental late-cycle investing challenge is to maintain exposure to growth without losing control of overall portfolio risk. In our view, as this cycle matures and turns it may never be advantageous to adopt all-out "late-cycle defensiveness", but markets will still be characterized by high volatility, potentially deep sell-offs, and a growing risk of financial shock—and that makes the challenge especially acute.

Four Principles for the Late Stage of This Cycle

We identify **four key principles** to help investors prepare for this developing environment:

1. The combination of low growth and fragmented liquidity is likely to result in occasional false signals of economic stress from financial market indicators, such as flat or inverted yield curves or unusual market-volatility patterns, making it important to **Distinguish Signals From Noise.** Economic forecasting models may need to be recalibrated, and investors may need to identify and focus more on indicators of genuine fundamental stress in the economy, globally.

2. As volatility and stock-bond correlations rise, and as valuations become stretched and downside risk grows, it is imperative to **Re-Assess Strategic Asset Allocation**. We stress the importance of genuine diversification and not just cosmetic or theoretical diversification; diversification across asset classes and regions, but also across investment styles; and diversification from well-trodden roads to less-crowded paths.

3. Part of that discipline can also involve trying to **Identify Through-Cycle Themes.** Perhaps more than ever before, secular growth themes are disrupting the economy and determining long-term investment returns, and many of these themes are themselves re-shaping what we think of as a "normal" business cycle: these, and other investments that are not cycle-dependent or can withstand the turn in the cycle, can be useful additions to a portfolio.

4. Finally, we would **Be Ready to Provide Market Liquidity**. The ability to move with nimble opportunism, as well as the capacity to absorb volatility and not resort to forced selling, could make a big difference as sentiment becomes more brittle in already illiquid, gapping markets. Maintaining a liquid portfolio component, and a bias toward high cash-flow strategies in less-liquid or illiquid investments, together with strong and decisive governance structures, can all help improve robustness.

In our view, these four principles can serve as a helpful guide through the late stage of any cycle—but they may be especially important during the turn in this highly unusual one. We think they encapsulate some of the best ways to survive in the event of a worse-than-expected outcome, while also providing the ability to thrive on the combination of fractured liquidity, volatility and shallow underlying growth that are likely to characterize the next downturn.

Distinguish Signals from Noise

How can investors tell when late-cycle is turning over into end-cycle? There are two places to look: at data coming from the real economy and at indicators from financial markets.

- **In QE-Distorted, Illiquid Markets, Price-Based Economic Indicators Are Compromised**
- **Fundamental Economic Indicators Are Mostly Green Lights**
- **Corporate Leverage May Be a Yellow Light**
- **China Bears Close Scrutiny**

Market Price-Based Indicators Are Compromised

If financial markets are forward-looking discounting mechanisms, they should begin to demand higher risk premia well in advance of a downturn in earnings or GDP growth. Equity market valuations might be expected to retreat from cyclical highs and credit spreads to widen from cyclical tights. The government bond yield curve might be expected to flatten and invert, as central bank policy tightening at the front end meets lower growth and inflation expectations at the long end.

All three of these indicators were flashing red at the end of 2018. But we believe all three are compromised as economic forecasters in the current cycle.

Deeper *Insight*

"Some things in the financial markets tell you a lot; others don't tell you very much at all, despite the attention and commentary they get. In our view, the shape of the U.S. Treasury yield curve is in the second category."

["CIO Weekly Perspectives: Preparing a Soft Landing"]

Yield curve flattening is partly a reflection of how low the starting point for long rates was after years of quantitative easing and subdued inflation expectations, and, in the U.S. especially, partly about the way that short rates are determined by domestic policy while long rates are determined by the global inflation environment.

High yield credit spreads blew out almost 100 basis points from their tights in September and global equity price-to-earnings ratios also retreated sharply. Investors who took that as a sign that markets were discounting a severe economic slowdown, however, would have missed one of the strongest New Year rallies in history.

In our view, moves such as these, in both directions, have less to do with underlying fundamentals than with fragmented liquidity in an environment devoid of traditional market makers and increasingly dominated by momentum-biased investment strategies. We have seen this before. The start of 2016 came as general bad news on China and oil prices coincided with perceived warning signals from widening credit spreads and equity market volatility. As financial markets flashed recession signals, more investors tried to sell into illiquid markets, and the signals flashed more urgently. Three years later, it is clear that this was noise.

Fundamentals-Based Indicators Are Still Mostly Green Lights

Back in early 2016, many commentators played down robust-looking U.S. fundamental data such as housing starts or consumer confidence. But that is where they should have been looking to get a real sense of where the economy was going, not at volatile financial markets.

Common forecasting indicators from the real economy include initial jobless claims, which have tended to trough and begin to climb again on average 16 months before the onset of a U.S. recession; industrial surveys such as the Institute for Supply Management (ISM) Manufacturing Index, which has tended to peak and begin to decline on average 21 months before a recession; and composite leading economic indicator indices, such as those maintained by the Conference Board, which have tended to peak 15 months before a U.S. recession. Analysts will often look for GDP growth to reverse after spending a good amount of time above potential. Household debt ratios are considered an indicator of the brittleness of consumer demand. And because the late stage in the cycle is often characterized by businesses deploying financial and corporate leverage in pursuit of earnings growth, many will consider a peak and turnover in debt ratios, mergers and acquisitions, IPO activity and profitability as another signal that the cycle is ending.

At the moment, these indicators paint a reassuring, or at worst a mixed, picture. Many indicate that the economy is still mid- or in some cases even early-cycle. Look at the picture outside the U.S., and the data trends suggest that the end of the cycle is even further away: recoveries in European employment, wage growth, inflation and industrial activity still lag those in the U.S., for example.

This mixed picture fits our thesis that structural changes to the economy have re-shaped the traditional manufacturing-led boom-and-bust business cycle we became used to between the 1930s and 1980s, leaving us with much noisier rather than signal-rich economic data, and longer but shallower downturns rather than outright recessions—in the absence of financial shocks.

Deeper *Insight*

"When markets stand at inflection points such as these, expect extremes of sentiment and momentum on the upside as well as the downside."

"CIO Weekly Perspectives: The V in Volatility"

"Bouts of volatility will likely be more frequent and violent, therefore, and that means economic forecasting models built on financial market indicators are now likely to be wrongly calibrated."

"CIO Weekly Perspectives: False Signals, Real Opportunity"

Figure 5. Signals from the real economy remain largely reassuring: no obvious "red lights"

	What's happening?	Signaling Risk?
U.S. Weekly Initial Jobless Claims	Resumed a sharp decline in 2019 after rising slightly at the end of 2018.	○ ● ○
U.S. ISM Manufacturing Index	May have peaked at 61.3 in August 2018, but still in expansion territory at 55.3 in March 2019.	○ ● ○
Conference Board U.S. LEI	Still improving, but the rate of improvement slowed in the last six months of 2018 relative to the first six months.	○ ○ ●
U.S. Output Gap	Marginally positive and still rising.	○ ○ ●
U.S. Household Debt-to-Income Ratio	Settled in a 75–80% range since 2012, a level last seen in 2003 and well below the 105% peak seen in 2009.	○ ○ ●
Net Debt-to-EBITDA Ratio (U.S. ex-fin)	The current level of 1.6x is lower than the 1.8x before the dotcom bubble bear market, but higher than the 1.4x before the financial crisis.	○ ● ○
Global Earnings Per Share	Still only 10% higher than the previous peak.	○ ○ ●
M&A (prev. 12 mo. as % of mkt cap)	The current level of 5.5% is only half the level reached before the previous two recessions.	○ ○ ●
IPOs (prev. 12 mo. as % of mkt cap)	The current level of 0.2% is less than half the level reached before the previous two recessions.	○ ○ ●

Source: Citi Research, Institute for Supply Management, Conference Board, Federal Reserve Bank of St. Louis. Data as of March 31, 2019.

Corporate Leverage May Be a Yellow Light

If the table above indicates an epicenter for such a financial shock, it is on corporate balance sheets. Corporate debt is 64% higher than it was on the eve of the financial crisis (see figure 3). But that headline number hides a lot of nuance.

A lot of attention is being directed to investment-grade companies. By 2018, gross leverage in this sector is near its long-term peak of 2.3–2.4x EBITDA, and interest coverage at around 10x is near a post-crisis low, according to Morgan Stanley Research. Almost two-thirds of that outstanding debt matures over the coming five years, potentially putting the sector at risk of rising rates or a spike in risk aversion in the primary markets. Much has been made of the rapid growth in outstanding BBB rated issuance as credit quality has deteriorated in the investment grade universe.

Deeper *Insight*

"Without Financials in the picture, what quickly becomes evident is that, contrary to the perception of 'out of control' BBB growth, the segment's expansion since 2005 roughly matches that of the broader credit market, as represented by the U.S. Corporate Credit Index ex-Financials. A more concerning trend, however, is the weighting of growth within the BBB space, where lower quality accounts for the bulk of recent market-value growth."

"BBBs: Beyond the Headlines"

However, it is important to note that financials, the most systemically important sector, has seen its credit profile improve since the financial crisis. And while gross leverage at investment grade corporates is at a 30-plus year high, net leverage is lower than it was around the technology crash of the early 2000s. This tells us that a lot of this debt has been taken on by companies in traditionally defensive, non-cyclical sectors to take advantage of the very low, long-dated interest rates that have been available for the most creditworthy borrowers. Moreover, U.S. corporate debt declined in 2018 as tax-reform proceeds were added to balance sheets, and companies have signaled an intention to de-lever further in 2019.

Headline data is perhaps even less indicative for Europe's credit markets. Quality has deteriorated in both the investment grade and high yield bond sectors since the financial crisis, with the BBB sector doubling and the high yield sector quadrupling in size, but much of this is due either to peripheral euro zone banks and non-financial corporates being downgraded in lockstep with their respective sovereigns, or to the big shift of lower-rated issuers from bank borrowing to the bond markets.

There are few signs of corporate exuberance in either the U.S. or Europe: M&A and IPO activity remains muted relative to the top of previous cycles, and the level of profits remains modest.

In high yield the picture is mixed. Bond market leverage appears already to have plateaued at 4.0–4.5x EBITDA, back in 2016. It is now heading toward 3x, and interest rate coverage is approaching a post-crisis high, according to data from Bank of America Merrill Lynch. In leveraged loans, however, high valuations in the private equity markets, combined with surging demand from investors seeking floating-rate protection as monetary policy tightens, have been pushing leverage up toward a ratio of 5.5–6.0x EBITDA. Moreover, that debt issuance has been getting more aggressive, coming from lower-rated borrowers, with looser covenants and a smaller high-yield bond cushion in capital structures. A rising proportion has gone to finance leveraged buyouts. The first quarter of 2019 has seen a demand for wider spreads and stricter lending standards, which can be interpreted as a welcome dampening of exuberance or a worrisome sign of cyclical fatigue.

How serious is this situation? A longer-but-shallower downturn would imply a higher default rate than in previous cycles, and lower recovery levels from defaulting bank loans, and that makes a strong case for a quality-focused, fundamentals-driven approach to credit. But we believe the work-out of imbalances in the credit markets is likely to be a long, grinding process rather than the sort of sudden shock that could spark a substantial slowdown in the real economy.

China Bears Close Scrutiny

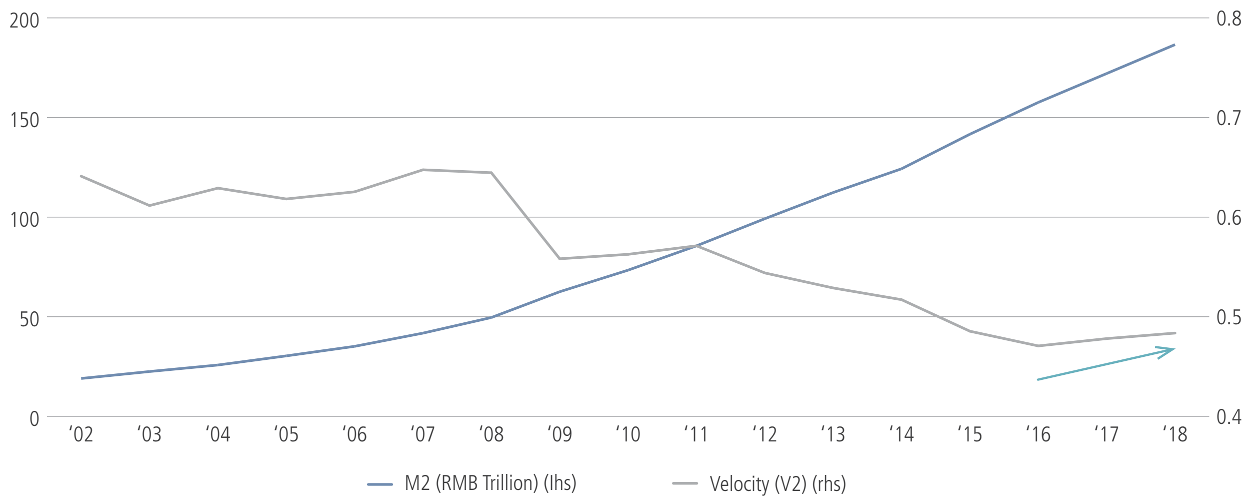
The source of a potential shock that could tip the rest of the world into a more severe downturn is China. This is mainly a reflection of the fact that China is the world's second-largest economy and the largest contributor to marginal global economic growth. It has been in a clear growth slowdown over recent years, accompanied by rising government and corporate debt levels and aging demographics. These dynamics have been exacerbated recently by its trade dispute with the U.S.

Deeper *Insight*

"We believe conditions [in bank loan markets] are indicative of late-cycle loan issuance. While there initially may be fewer defaults in the coming economic slowdown than there were before the shock of the financial crisis… [looser] underwriting tendencies are creating credit risks that could lead to an extended and meaningful default cycle… once the current economic expansion ends."

"Senior Loans: Positioning Portfolios for a Maturing Cycle"

Figure 6. Velocity of money in China may have troughed in 2016, due to stimulus



Source: NBS, Federal Reserve Bank of St. Louis. The velocity of M2 money is calculated by dividing nominal GDP by the stock of M2 money. Data as of December 31, 2018.

The authorities have responded with stimulus efforts focused on cuts to individual income tax, enterprise income tax and value added tax, and to the required reserve ratio for banks, and these actions have addressed a number of short-term concerns. There are early signs of success in the growth of credit and the velocity of money, and in some other fundamental data.

But where should investors look for consolidating evidence that these measures are gaining traction? Headline GDP data is considered unreliable and many other economic data sets are patchy, but seasoned China watchers are used to monitoring indicators that are one or two steps removed from the official Beijing data bureaucracy: examples include Markit Purchasing Managers' Indices (PMIs) and data on electricity consumption, vehicle sales, airline passengers, container ship and rail freight, and industrial apparent consumption of basic commodities.

In China (and indeed, for many indicators, in Europe) we are looking for—and at this stage, still anticipating—signs of bottoming-out and recovery. PMI prints so far in 2019 have been encouraging and rail freight data has been mixed. However, containership through-put, vehicle sales and airline passenger numbers have declined through 2018 and into 2019, and industrial consumption of commodities has been declining since 2017. Data releases over the coming months will be critical.

Finally, it is worth noting that the risks described here are near-term. Should they fail to materialize as a recession, it is not clear what the catalyst for recession might be in 2020 or even 2021. This recognition informs our expectations for an extended cycle, but also leaves open the potential for a final surge in risk appetite that could fuel high market returns but also the danger of greater asset bubbles or other financial imbalances.

Re-Assess Strategic Asset Allocation

The fundamental late-cycle investing challenge is to maintain exposure to growth potential without losing control of overall portfolio risk at a time when the future state of earnings and balance sheets is coming into doubt and valuations in risk markets are full to high. In the past, the solution has often come from using equity rallies to rotate into government bonds, which have tended to enter the late stage of a cycle with high yields. We believe that strategy is unlikely to work this time around.

- **Low Bond Yields Require Investors to Re-think Diversification**
- **Diversifying Genuinely, Not Cosmetically**
- **Diversifying Across Regions and Investment Styles**
- **Diversifying Onto Less Crowded Paths**

Low Bond Yields Require Investors to Re-think Diversification

A decade of central bank intervention and concerns about long-term growth and inflation have left government bond yields low or even negative. That exacerbates the common late-cycle challenge of rising stock-bond correlation and leaves the more cautious investor with no obvious place to go when they underweight their equity allocation. In any case, the prospect of a longer-but-shallower downturn questions the very idea of adopting a meaningfully defensive stance.

When it is not clear whether investors should be overweight or underweight equities, credit or government bonds, the obvious conclusion is that they should try to maintain genuine balance and diversification—which means a thorough re-assessment of how diversification is achieved in strategic asset allocation.

Figure 7. Stock-bond correlation has tended to rise with the higher growth and inflation of a mature cycle

12-month U.S. stock-bond correlation under different growth and inflation conditions, 1947–2018

U.S. CPI Inflation (Y-O-Y Growth)

U.S. GDP Growth (Q-O-Q, Annualized)	<1.5%	1.5–2.0%	2.0–2.5%	2.5–4.0%	4.0–5.0%	>5.0%
<1.0%	-0.41	-0.69	-0.46	-0.22	-0.1	0.36
1.0–1.5%	-0.32	-0.54	-0.27	0.01	-0.03	0.28
1.5–2.5%	-0.24	-0.22	-0.48	-0.13	0.18	0.27
2.5–3.5%	-0.2	0.01	-0.21	0.15	0.27	0.29
3.5–4.5%	-0.08	-0.19	-0.01	0.2	0.44	0.4
>4.5%	-0.1	-0.11	0.25	0.31	0.12	0.37

Source: Bloomberg, Neuberger Berman.

Deeper *Insight*

"[The resilience of risk parity portfolios during periods of rising rates] should make us reflect on two things: the ability of bonds to generate positive returns while rates are rising and the power of diversification."

"How Risk Parity Can Cope with Rising Rates"

"Approaches to multi-sector fixed income investing that worked over the past five years are unlikely to work over the next five years. We see portfolios confronting a number of challenges in the medium term, including how to maintain income without significant increases in credit allocations or a deterioration in the quality of those allocations; how to generate positive total returns in an environment of low rates, tight spreads and relatively high correlations; and how to ensure that fixed income exposures contribute to portfolio diversification rather than detract from it."

"A Changing Landscape for Multi-Sector Fixed Income Investing"

Diversifying Genuinely, Not Cosmetically

Perhaps the two most important things to remember when it comes to portfolio diversification is that the traditional "balanced" 60/40 allocation is not genuinely diversified and that allocations drift with movements in markets.

The first step in diversifying genuinely rather than cosmetically is to ensure that a portfolio is not dominated by equity risk, which is very much the case with the traditional 60/40 portfolio. Even if an investor didn't start with a 60/40 portfolio, a decade-long bull market for risk assets has raised the chances that portfolios have become unbalanced since. Turning to government bonds for ballast is not as simple as it has been in most previous cycles, however. While rising interest rates and bond yields are not in themselves enough to impose losses on bondholders, the second step in diversifying genuinely is to think about the key risks facing bonds, and ways to mitigate them.

The clearest risk is inflation. For structural reasons, we think the probability of lengthy periods of high inflation is low, but it is prudent to expect some rise in inflation during the mature part of a business cycle. Within bond markets, that suggests a case for Treasury Inflation Protected Securities (TIPS) and other inflation-linked bonds, as well as floating-rate securities such as carefully selected bank loans. Beyond bond markets, commodities have often performed well during inflation spikes and the later stages of the cycle, and publicly traded real estate securities offer an attractive mix of defensive growth, inflation-linked cash flows and real-asset exposure. Because inflation expectations are so muted, many of these markets remain attractively priced.

Another way to maintain income in a portfolio while limiting sensitivity to rising rates is to take bond positions at the shorter end of the yield curve. Because yield and credit curves are currently so flat, across many credit markets this can be done with little or no sacrifice in terms of yield. Thinking about where to allocate on bond curves is almost as important as thinking about where to allocate among bond sectors.

Finally, while an allocation to liquid alternatives is perhaps the only non-problematic overweight to be carrying into the later stages of an investment cycle, this too requires careful consideration. Terms like "alternatives" and "hedge funds" cover a very wide range of heterogeneous strategies, and many of the most popular and visible, such as traditional long-short equity funds, can bring a lot of straightforward equity market exposure into a portfolio. By contrast, we would favor paying special attention to "uncorrelated strategies" that derive substantially all their returns from market-agnostic trading strategies: these include equity market-neutral and statistical arbitrage, trend-following, macro, volatility and arbitrage strategies, as well as strategies exposed to non-financial risks, such as insurance-linked securities. Quantitative investment such as alternative risk premia strategies, which can be structured to be market-neutral or market-agnostic but are not generally categorized as hedge funds, also have a role to play here.

Deeper *Insight*

"However they are positioned, we believe that investors are well advised to assume that global inflation is a sleeping giant rather than a slain dragon. Its comeback is unlikely to be as dramatic as it was back in the 1970s and 80s, but with fixed income valuations at their current levels it could still cause a lot of damage."

"Inflation: Slain Dragon or Sleeping Giant?"

Diversifying Across Regions and Investment Styles

As more and more investor assets move to passive management in search of cost savings and governance simplicity, it is worth remembering the important role that active management—both within asset classes and in multi-asset mandates—has to play in the later stages of a cycle. This is partly about maintaining exposure to the value and liquidity premia that are increasingly left behind by the herding and momentum biases of passive investment, particularly as volatility rises. It is also about maintaining desired regional, sector and style exposures.

For example, while we may speak of the late cycle dynamics of the global economy, the fact is that different regions appear to be at different points in their cycles—and China and other emerging markets are navigating their own mega-cycles of economic development and fiscal reform. In recent months that has been evident in numerous value opportunities. For example, over the past two years, the differential between the short rates of the U.S. and the rest of the developed world have enabled U.S. dollar investors to earn up to 3% per annum just from hedging global bond allocations back to their base currency. The price-to-earnings ratio differential between U.S. and European equities, or the yield differentials between the yields of the U.S. and European corporate and emerging markets sovereign debt have provided similar opportunities.

Within the U.S., where late-cycle characteristics are more evident, we would broadly favor a tilt toward larger, more liquid stocks, and higher quality businesses with lower balance-sheet leverage, more visible earnings, higher free cash flow and lower beta to the broad equity market. A tilt to quality, while taking care to avoid excessive valuation multiples, could help to dampen downside volatility, mitigate the impact of multiple compression as earnings growth begins to deteriorate, and impose discipline during a stage in the cycle when bubbles tend to inflate to their limits. This discipline may turn out to be very important in this cycle: the main risks that we identify are near-term, and should they fail to materialize it is difficult to discern a catalyst for recession in 2020 or even 2021—potentially setting the scene for a sentiment-driven rally that runs ahead of the reality of corporate earnings.

Investors should also consider regional cyclical differentials when allocating domestically: in the U.S., for example, our central scenario of a soft landing for the U.S. economy, engineered by a more accommodative Federal reserve, and a gradual recovery in the rest of the world, powered by stimulus out of China, makes a case for companies with high foreign sales and high non-U.S. dollar revenues.

Deeper *Insight*

"In simple terms, a manager with 50% in longs and 50% in shorts doesn't care whether the broad market is going up or down; a trend-follower can jump on market moves regardless of whether a GDP print is good or bad, or rates are going up or down; and economic news means nothing to an investor collecting premia for re-insuring hurricane risk."

"Beta Blockers: The World of Uncorrelated Strategies"

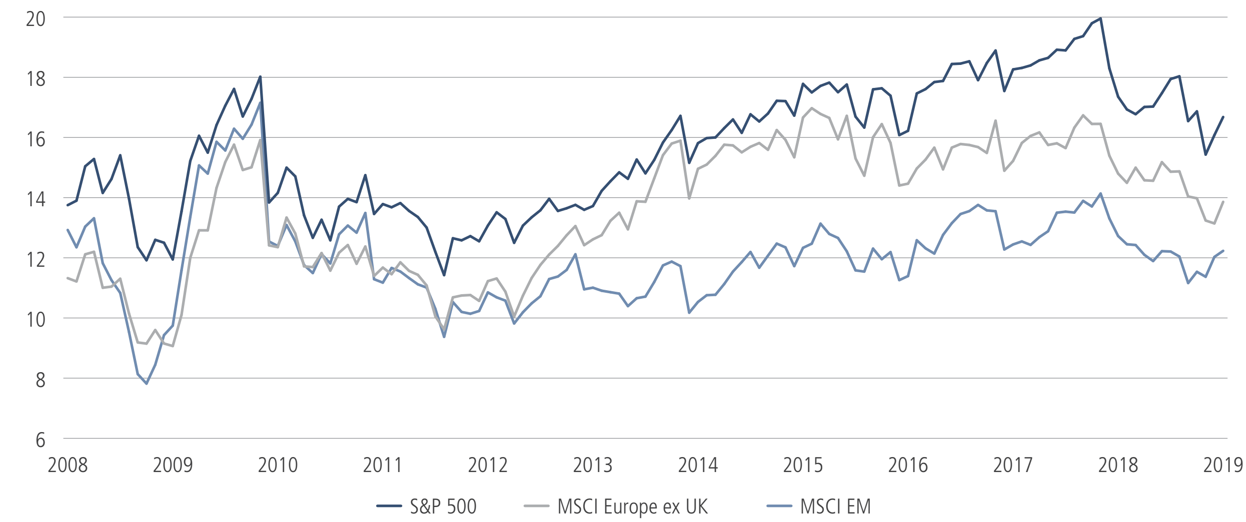
"Inflation and interest rates appear to be rising, traditional asset markets appear close to full valuations, investors are starting to look over the horizon toward the maturing and turning of the current business cycle, and as a result, volatility has risen and asset correlations have tightened. The threefold approach of put option writing, alternative risk premia and risk parity can help address this challenge by implementing low-volatility, low interest rate risk equity exposure, uncorrelated alternative risks and genuine diversification between traditional market risks. We believe these solutions can be very powerful at any time—but particularly in the current conditions."

"Strength in Numbers"

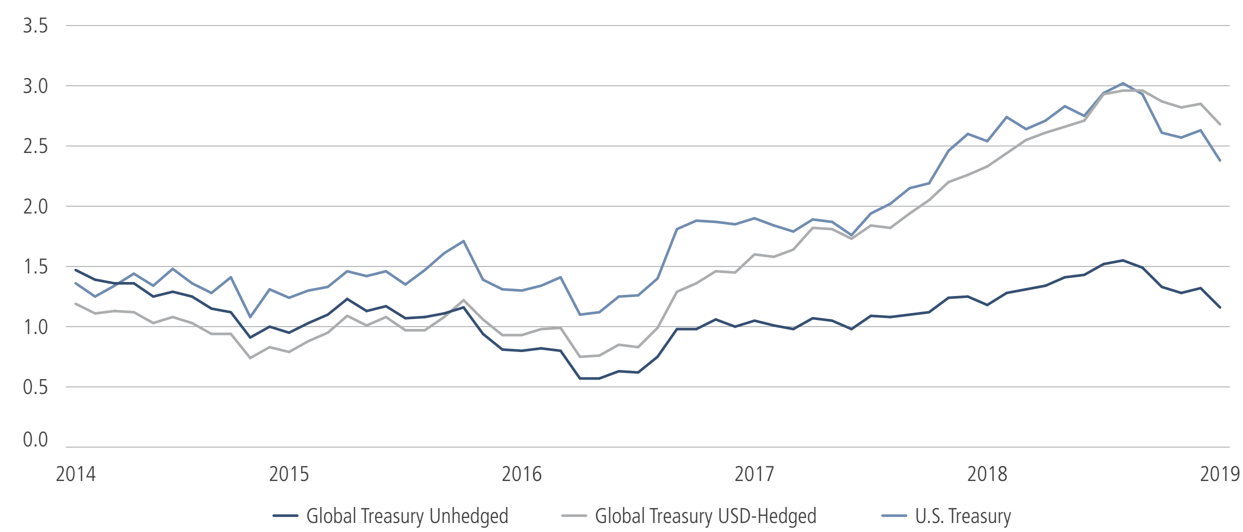
Figure 8. Regional Cycle Divergence Can Create Opportunity

Spread differential between hard currency emerging markets debt and U.S. high yield (bps)

Equity index forward price-to-earnings ratios



Global government bond yields for a USD-based investor, hedged and unhedged



Source: JPMorgan, Bloomberg Barclays, Bloomberg. Data as of December 31, 2018 (top), February 28, 2019 (middle) and March 31, 2019 (bottom).

Diversifying Onto Less Crowded Paths

When valuations look stretched in many traditional markets, it can pay to seek out new or niche markets and strategies that are less crowded.

Some of these can be found in the hedge fund and uncorrelated-strategy worlds: insurance-linked securities are a good example of a market that moves according to its own cycle of reinsurance supply and demand, itself driven by the incidence of natural catastrophes rather than the ebbing and flowing of corporate and consumer balance sheets.

In private markets, while leverage and valuations in traditional U.S. buyout are still lower than we see in public markets, they are nonetheless touching all-time highs. Buyout certainly brings its own diversification benefits, such as greater exposure to operational improvements in businesses and innovative products, as well as lower mark-to-market volatility and an illiquidity premium. It also delivers cyclical diversification: some of the best returns to buyout funds have come from vintages raised when public markets were at their peak, because those commitments were put to work during the ensuing downturn. Nonetheless, further diversification is possible, not only by allocating to venture and growth-capital funds, or to the less-exuberant European buyout markets, but also by exploring idiosyncratic opportunities via co-investment and secondaries (which often come with more favorable fee structures), and by investing in cash flow-generative niches such as private debt, trademarks or royalty streams. Private markets allocations can also be a good way to underwrite particular investment themes through a cycle, and investment themes that are independent of the cycle.

Other less crowded paths include alternative ways of extracting returns from traditional asset classes. Alternative risk premia strategies are the obvious examples, but they would also include the writing of collateralized equity index put options. Over time, a "PutWrite" strategy can be shown to have delivered similar returns to its underlying equity market with around two-thirds of the volatility. Late in the cycle many investors are likely to tilt their equity allocation toward more defensive, income-generating stocks—but in an environment of low and rising bond yields there may be less appetite for the marginal interest-rate risk that entails: PutWrite is one way to add lower-volatility equity exposure without adding to interest-rate risk.

Finally, there are examples of entirely new asset classes. Still a largely European phenomenon, hybrids are very long-dated but callable subordinated bonds, whose coupon payments can be deferred just like dividend payments, which are mostly issued by large, high-quality telecom and utility companies. Hybrids have typically offered four to five times the spread of the same issuer's senior bonds: as the cycle matures and low-quality balance sheets deteriorate, picking up extra spread by moving down the capital structure of a high-quality issuer may be less risky than chasing yield from lesser-quality issuers.

Deeper *Insight*

"Insurance Linked Strategies are by their very nature uncorrelated with financial markets. No recession ever caused an earthquake, and an Atlantic hurricane is unlikely to trigger a sell-off in the S&P500 Index."

"Diversifying Into Insurance Risk Premia"

"The recent volatility in credit and risk assets in general has provided hybrids with one of their first big tests since the market started to grow substantially, six years ago. Overall, they have passed that test comfortably, responding to current dynamics as we would have expected and consolidating their reputation as a source of structural yield pick-up relative to their issuers' senior bonds."

"Hybrids: The Spread Over Senior is Key"

Identify Through-Cycle Themes

One way of dealing with cyclical investment challenges is to look for investments whose performance is not primarily determined by the business cycle, or whose dynamics supersede or "look through" that cycle.

- **Emerging Markets Are Navigating Their Own Mega-Cycles**
- **Thematic Investments Can Deliver Idiosyncratic Risk and Resilient Earnings Growth**

Emerging Markets Are Navigating Their Own Mega-Cycles

When we consider emerging markets, on the one hand we are dealing with an asset class that appears highly leveraged to the business cycle because of its importance in global supply chains and its sensitivity to the U.S. dollar. On the other hand, emerging markets are also navigating their own mega-cycles, which are not only generating structurally higher growth, but also actively changing their relationships with macro risks and the global business cycle.

Deeper *Insight*

"Between 2001 and 2011 almost 670 million people escaped poverty. The middle-income group itself almost doubled with the addition of some 400 million people: many countries now have per capita GDP and median income above the important $3,000 and $6,000 thresholds at which people start to buy more meat, snack foods and the refrigerators to store them, and mobile phones and other high-end durables, respectively."

"Emerging Markets: The Fear, the Facts and the Future"

"The investible emerging markets equity universe has experienced a seismic shift over the last decade: major markets have migrated from being mainly exposed to global cyclical forces to more of a mix of global information technology and local consumer-driven stocks… [This should] encourage us to think again about how emerging markets are valued—relative to developed markets, but also relative to their own history. Emerging markets may not be as expensive, or as cyclical, as one might think."

"From Commodities to Computers"

Their populations are fast becoming the world's consumers, not just its producers. They are balancing growth driven by commodities and low-value manufacturing with growth driven by consumption and high technology. And since the balance-of-payments crises of the late 1990s and early 2000s, many have adopted fiscal, monetary-policy, economic and financial reforms that have reduced deficits, balanced current accounts, built foreign-exchange reserves, tamed inflation, floated exchange rates and replaced billions of dollar-denominated liabilities with local-currency debt.

Should China's stimulus measures fail to gain traction or the U.S. dollar continue to strengthen, neither would be positive for emerging markets. But it is also the case that emerging economies are now better able to absorb such stresses through exchange rates rather than through the large rate hikes, punishing current account adjustments and deep internal devaluations of the past. Indeed, we have already seen these structural, through-cycle reform programs protect emerging markets' positive growth differential during the 2008–09 financial crisis.

Thematic Investments Can Deliver Idiosyncratic Risk and Resilient Earnings Growth

There are many other places to look for similar long-term investment themes. Some, such as mitigating the impact of climate change, represent both vast challenges to society and billions of dollars' worth of growth-investment potential. Others, such as Big Data, artificial intelligence or 5G connectivity, have the potential to drive change in almost every part of our lives in perhaps unimaginable ways.

Identifying these themes is not easy, and identifying the right investments to get exposure to them is an even greater challenge. At Neuberger Berman we believe that a real commitment to thematic thinking and analysis as well as deep sector expertise—analysts covering specific sectors over entire careers, as we have at Neuberger Berman—can help identify genuine megatrends with higher conviction.

The advantages, in terms of diversifying away from the business cycle, are twofold. First, they can be sources of resilient earnings growth during a period of widespread earnings deterioration; and second, investments that are leveraged to particular themes are often subject to idiosyncratic volatility, driven by newsflow around the theme rather than, say, the strength of the U.S. dollar or manufacturing PMIs.

Of course, investors who look through cycles too blithely can get sucked into bubbles—particularly during the later stages of a cycle. It is worth remembering that the dotcom bubble had its origins in the avoidance of a U.S. recession in 1998, when the Federal Reserve responded to a downturn in global demand and a series of emerging markets crises with three rate cuts: the resulting relief grew into market exuberance that soon over-ran the reality of corporate earnings.

Still, considering how the list of the world's 10 biggest companies have changed over the past decade should remind us of two important things: Amazon did not become bigger than Walmart or Johnson & Johnson simply because it has navigated this business cycle more efficiently or aggressively, but more because it has been instrumental in changing the way our economy works; and the top four, which are all technology companies, are survivors of the dotcom bubble.

Deeper *Insight*

"Over the coming decade, as lower return outlooks incentivize allocations to high-growth, high-return markets, we fully expect the current distinctions between the developed and emerging worlds to dissolve; investors are increasingly likely to reject this somewhat arbitrary division in favor of pursuing the best investment opportunities across the multipolar world."

"2008–2018–2028—The Dissolving Divides That Will Shape the Post-Crisis Investment Era: Emerging World/Developed World"

"If 4G was the bicycle, 5G is space travel… If cars could communicate with curbside sensors and other cars smoothly in real time, self-driving vehicles would become a reality. Surgeons would be able to operate remotely using 5G-connected robots. Your refrigerator could tell your phone that you're out of milk, your phone could order some from the supermarket, which would deliver it in a self-driving van. Similar inventory management at the corporate level would enable the smart warehouse. At the social level, thousands upon thousands of machines could communicate with one another to make the smart city."

"CIO Weekly Perspectives: Five Eyes on 5G"

Figure 9. The world's biggest companies have changed due to structural, not cyclical dynamics

中国建设银行 China Construction Bank

Johnson & Johnson

ExxonMobil

Walmart

Microsoft

PetroChina

THEN

Shell

BR PETROBRAS

中国移动 China Mobile

中国工商银行 INDUSTRIAL AND COMMERCIAL BANK OF CHINA

World's 10 biggest companies by market capitalization

2009 and 2019

amazon

ExxonMobil

Microsoft

BERKSHIRE HATHAWAY HomeServices

Alphabet

NOW

Alibaba Group 阿里巴巴集团

facebook

Johnson & Johnson

Tencent 腾讯

As of March 31, 2009, and March 31, 2019.

Be Prepared to Provide Market Liquidity

The next downturn will be the first since the financial crisis of 2008–09. That is significant, because a post-crisis wave of regulation has left the structure of the financial market very different than it was going into previous recessions. Illiquidity poses risks, but may also generate opportunity for those prepared to provide market liquidity.

- **Market Liquidity Has Diminished**
- **Maintaining a Liquid Portfolio Component and a Bias Toward High Cash-Flow Strategies**
- **With Nimble Opportunism, Liquidity Providers May Be Able to Benefit From Volatile and Gapping Markets**

Market Liquidity Has Diminished

Amid the wave of regulation in the aftermath of the financial crisis, both Basel III and the U.S. Dodd-Frank Act incentivized or required investment banks to reduce their balance sheet risk. That has led them to hold fewer securities for proprietary trading, market making and liquidity provision. These measures have had their biggest impact in fixed income markets. But the structure of equity markets has changed beyond all recognition since the financial crisis, too, for two different reasons.

As liquidity-provision has moved off of broker-dealer balance sheets, where humans would take risk based on slower-moving value and mean-reversion indicators, it has moved onto the balance sheets of high-frequency trading funds, which take risk based on split-second changes in volatility-based risk parameters. Whereas the human liquidity provider would have seen opportunity for profit in volatile markets, algorithms tend only to see risk—which means they withdraw liquidity, in aggregate, just when it is most needed. The liquidity picture in equity markets has also changed due to the volume of invested assets that have migrated from traditional, value-focused, fundamental bottom-up portfolio management to a range of momentum- and volatility-focused quantitative, systematic and passive strategies.

Figure 10. Banks' capacity to offer market liquidity has diminished

Net U.S. dealer positions in corporate credit, USD billions

Source: Federal Reserve Bank of New York.

For investors, this means three things.

First, overall market volatility and correlations are likely to be higher than they have been during past cycles, on average, with price changes more likely to be sudden and "gapping." This has implications for portfolio risk management and also for the calibration of market price-based economic indicators.

Second, counting on liquidity to exit from riskier positions when signs of a downturn become evident could be a painful strategy in this new environment.

Third, the combination of fragmented liquidity and brittle investor sentiment could present excellent long-term value opportunities for those who maintain the liquidity and flexibility to take them.

Deeper *Insight*

"The Street closed up shop through December, and virtually all trades had to be executed on an agency basis."

"CIO Weekly Perspectives: False Signals, Real Opportunity"

"Banks that used to provide an important buffer between buyers and sellers with their willingness to hold securities on their balance sheets now have less capacity to do so. As a result, bond 'warehousing' has plummeted."

"The Changing Banking Landscape: Opportunities and Risks for Investors"

Maintaining a Liquid Portfolio Component and a Bias Toward High Cash-Flow Strategies

In equities, that suggests exposure to larger, more liquid stocks. Higher quality may also be desirable in the form of lower balance-sheet leverage, more visible earnings and higher free cash flow, as well as lower beta to the broad equity market.

In fixed income, quality and fundamental credit analysis is key—not only because balance sheets tend to deteriorate in the later stages of the cycle, but because the lack of liquidity increases the probability that investors will be forced to hold positions to maturity, or through the turn in the cycle.

This need not leave a portfolio entirely without liquidity. Cash flow can be optimized so that less-liquid or illiquid positions are constantly injecting large amounts of liquidity into a portfolio, by increasing the amount of principal being repaid alongside regular coupons. That can be done by favoring shorter-duration credit: because yield and credit curves are currently so flat, across many credit markets this can be done with little or no yield sacrifice. It can also be achieved by including an overweight to amortizing positions in commercial and residential mortgages, or to the debt or mezzanine tranches of collateralized loan obligations (CLOs).

Even in the most illiquid corners of a portfolio, in private markets, diversifying into short-duration, cash-generative private debt and taking full advantage of the secondaries market can help to maintain cash flow.

With Nimble Opportunism, Liquidity Providers May be Able to Benefit From Volatile and Gapping Markets

Maintaining a liquid portfolio component and a bias toward high cash-flow strategies can help maintain the flexibility to be a provider rather than a demander of liquidity when volatility, price dislocation and price gapping strikes. We believe that particularly keen opportunities might open up in some of the less liquid corners of the credit markets through the course of the next downturn: prices here can drop substantially further than those for more liquid paper during periods of risk aversion.

The catalyst for that dislocation in high yield may be located in the ratings band just above it: the BBB rated part of the investment grade universe has grown considerably over recent years, and some its constituents have taken on substantial leverage. We believe the number of downgrades from BBB to high yield is likely to be lower than in previous cycle due to the predominance of defensive, cash-generative businesses in that ratings band. Nonetheless, the dollar value is likely to be substantial: 20% of the current $1.8 trillion BBB market could be at risk, which would equate to $360 billion, or an extra 33%, being added to the high yield market.

Investors that maintain a liquid portfolio component now will be able to take full advantage of any disruption this may cause. They may also wish to seek out fund structures that lock-up investor subscriptions for these opportunities, but charge fees only on capital that has been called and invested. At the more general level, governance structures that get dislocation strategies ready now, as well as the decision-making steps they require, are likely to be better prepared for opportunities that arise as the cycle matures and eventually turns.

Deeper *Insight*

"Without Financials in the picture, what quickly becomes evident is that, contrary to the perception of 'out of control' BBB growth, the segment's expansion since 2005 roughly matches that of the broader credit market, as represented by the U.S. Credit Corporate Index ex-Financials. A more concerning trend, however, is the weighting of growth within the BBB space, where lower quality accounts for the bulk of recent market-value growth."

"BBBs: Beyond the Headlines"

Final Thoughts: Late-Cycle Investing Takes Us Back to Basics

Given our starting point that business cycles are structurally longer, with shallower but extended downturns, it is perhaps no surprise that our late-cycle investing principles should be so "evergreen." While each cycle is different and each stage of a cycle is different, we think these principles of thoughtful asset allocation, true diversification, risk awareness and robust governance take investors back to basics.

Part of our argument is that cyclical dynamics have become less distinct due to structural changes in the way the economy works. The other part of our argument is that a genuinely strategic approach to investing should be applicable anywhere in the cycle, and should enable one to look through the cycle.

The sell-off in the fourth quarter of 2018 left U.S. high yield spreads at 400–500 basis points and the forward price-to-earnings ratio and free cash flow yield of the S&P 500 at or below their fiftieth percentiles. Both represented buying opportunities. There may be many such moments before this current cycle has turned: given the focus of investor anxieties and the illiquidity of the markets, similar opportunities seem likely to re-emerge over the coming years in collateralized loan obligation (CLO) tranches, bank loans, high yield bonds, emerging market debt and China bonds.

While some investors may wish to adopt a marginally defensive position as an economic expansion ages, few would spurn risk that is priced so attractively simply because we appear to be late in the cycle. Many could be forced to forego those opportunities, however, because their portfolios turn out to be more illiquid than they realized, or less diversified or exposed to different risks than they realized, or simply because they are unaware of the nature of the opportunity.

To put it another way, making portfolios robust against the volatility of the cycle ("surviving") is also about maintaining the ability to pick up value opportunities that look through the cycle ("thriving").

When we write about our principles for late-cycle investing, therefore, we do so not to delineate the "right" allocations to make or even the "right" sort of portfolio to adopt. Instead, we are trying to delineate the right sort of questions to ask of your governance structures, your flexibility and your adaptability as an investor, at the point when they are likely to face their most stringent test.

In our view, successful late-cycle investing is about getting back to basics. If you are able to pursue your portfolio strategy during this period, you are more likely to be on surer ground whatever stage of the cycle we are in.

Deeper *Insight*

"When market return outlooks are low, investors can benefit from being opportunistic in establishing their long-term holdings. In private markets, they can take advantage of secondary, co-investment and lending opportunities. In public markets, they can move fast to exploit periodic price dislocations and liquidity or credit crunches. But they can only do these things successfully with a suitable decision-making structure in place."

"2008–2018–2028—The Dissolving Divides That Will Shape the Post-Crisis Investment Era: Asset Owner/Asset Manager"

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