ACG | ASSET CONSULTING GROUP

Late Cycle Investing

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Executive Summary

Where Are We in the Economic/Market Cycle?

- Concerns have grown that the U.S. is in the **"later stage" of the current economic and market cycle**
- It is important to understand that economic and market cycles, while correlated, **do not always move together**
- Recessions can have many different origins, but with the benefit of hindsight we often see that they are the result of some **dislocation or "bubble" in the economy**
- Economic/market peaks are **difficult to identify in real time**

What Does History Tell Us?

- An inverted yield curve and increasing unemployment have traditionally been **good recession predictors**
  - The yield curve is creeping closer to inversion and unemployment is at a historical low**, both of which suggest we are getting much closer to a recession**
- Leading indicators and consumer sentiment are **not yet indicating concerns**
- The margin debt ratio is climbing towards 3%, which is at the **high end of its historical range**
- The S&P 500 cyclically-adjusted PE (CAPE) ratio implies equity market valuations are **closer to a top than a bottom**
  - Margin debt and CAPE ratios imply **that a market selloff/correction could occur in the not too distant future**

Investment Implications

- Bonds provided protection in the previous two economic/market cycles, but in time a **diversified portfolio catches up to and outperforms** a bond portfolio
- Relying solely on bonds to provide protection in the next downturn/selloff is problematic due to the likelihood of **rising rates and lower bond returns**
  - Rates/yields could **continue to move higher** even if equities sell off due to the Fed's desire to normalize rates
- Being able to **successfully time markets is exceedingly difficult**, if not impossible, to do consistently
- Investors should **maintain portfolio diversification** and resist the urge to radically alter portfolio asset allocation

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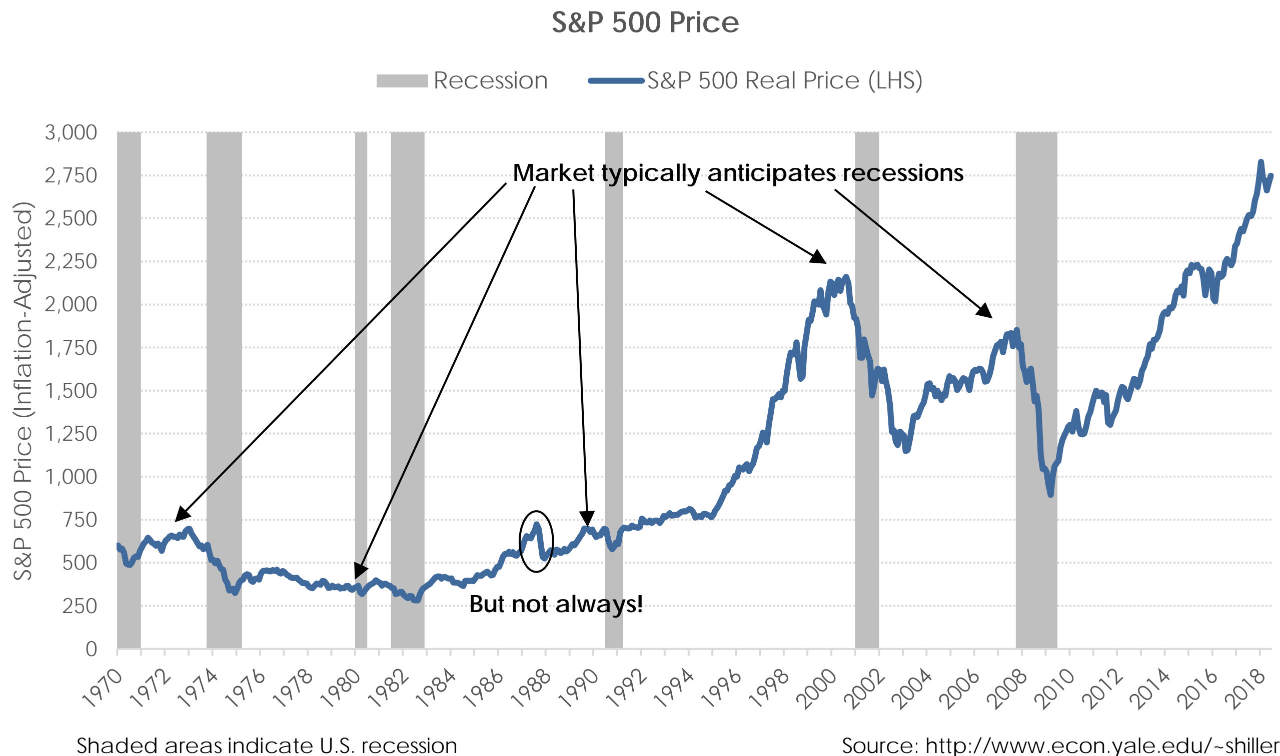
Where Are We in the Economic/Market Cycle?

For the last several years, concerns have grown that the U.S. is in the "later stage" of the current economic and market cycle. It is important to understand that economic and market cycles, while correlated, do not always move together. The distinction is important because investors don't have a direct way to invest in the economy, rather, they must invest in the stocks and bonds of companies that operate *within* the economy. Under efficient market theory, securities prices should fairly reflect all available economic information, in which case we would expect market cycles and economic cycles to move together. While this is usually the case, there are times (most recently in 1987) when the markets have sold off without a recession ensuing:



Shaded areas indicate U.S. recession

Source: http://www.econ.yale.edu/~shiller/

The shaded areas indicate periods of economic recession, defined by the National Bureau of Economic Research (NBER) as two consecutive quarters of negative Gross Domestic Product (GDP) growth. Since the 1970s, there has been a **recession on average every 8.25 years**, with an average duration of just over 9 months. With the notable exception of 1987, the stock market has generally been a leading indicator of an economic recession, as the **market has historically experienced a significant decline 3-9 months before a recession starts**.

Recessions can have many different origins, but with the benefit of hindsight we often see that they are the result of some **dislocation or "bubble" in the economy**. In the 1970s, the oil embargo by Middle Eastern countries caused hyperinflation and dramatic price increases in an economy that was not prepared for such a sudden and dramatic increase in costs. The early 1980s were characterized by the Federal Reserve's **tightening of monetary policy in an attempt to curb inflation**, which slowed the economy and caused unemployment to peak at 10.8%. The brief recession in the early 1990s was caused by a **shock to oil prices** in the wake of the Iraqi invasion of Kuwait, and the early 2000s recession was caused by a **price bubble in technology stocks** that corrected at a time when the Fed was continuing to raise rates. The most recent recession in 2008 was due to the **bursting of a sub-prime debt bubble** that caused the failure and collapse of many large financial institutions.

Can we ever really know where we are in the economic and market cycles? Certainly in hindsight the peaks and valleys are easily recognized, but the task is much more difficult when we are trying to evaluate

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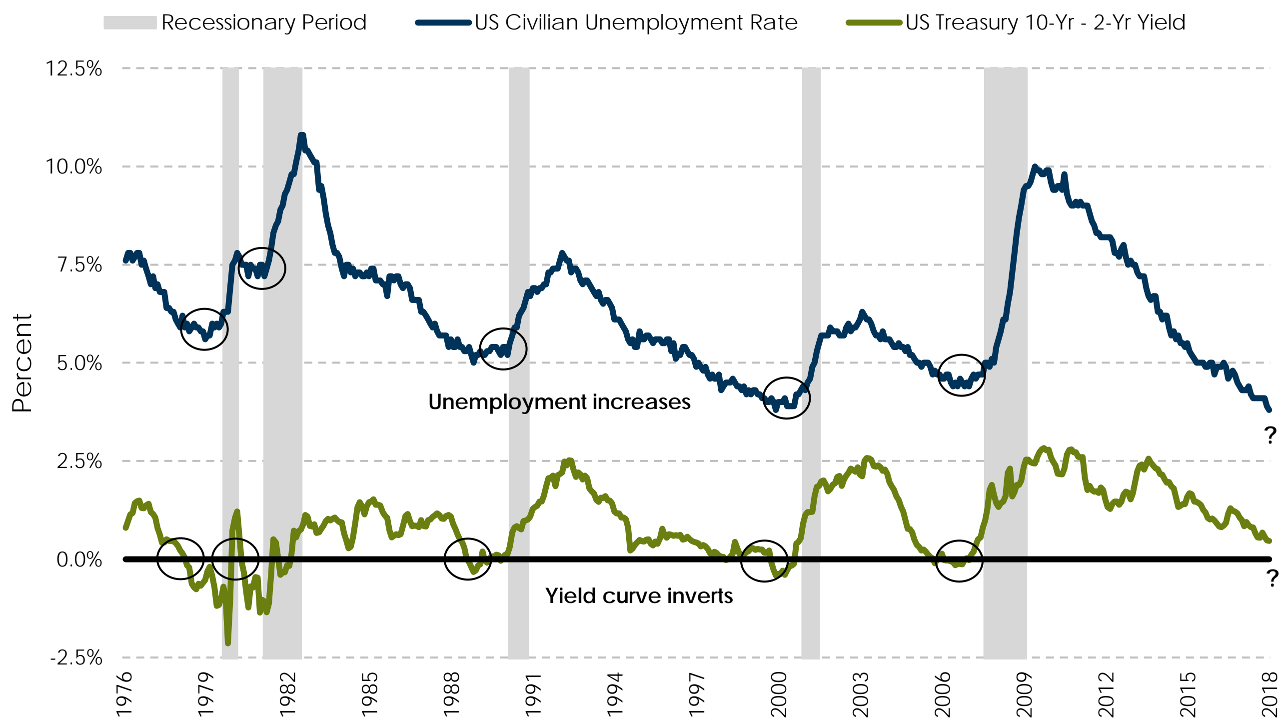
the present day. While it would be extremely helpful if the National Bureau of Economic Research would tell us in advance when we are about to experience two consecutive quarters of negative GDP growth, such an "advance warning system" is unlikely. Market selloffs are similarly difficult to predict, as there are always any number of pundits predicting the market's imminent demise. While we can't know for certain where we are in the current economic/market cycle, we can look at previous historical periods to gain some insights into where we are *likely to be*, assuming that the historical relationships we've observed in the past will still be valid in the future.

What Does History Tell Us?

Economic Cycles

As we look at previous historical periods, we find several data points that do seem to be fairly consistent indicators of economic recession. Chief among these are the **shape of the yield curve and the level of unemployment**. In the past we have seen that when the yield curve inverts and unemployment begins to pick up from a low point, a recession has often ensued:



Shaded areas indicate U.S. recession

Sources: St. Louis Federal Reserve, BLS

The shape of the yield curve refers to the slope of Treasury yields across the maturity spectrum, which is normally positive and upward sloping during economic expansions. This intuitively makes sense as rational investors should demand higher yields in return for longer lending periods. The curve can invert when **short term yields rise as long term yields decline**, a phenomenon we see occurring today due to the Federal Reserve raising the Fed funds rate while strong demand for longer term treasuries continues to dampen long yields. As can be seen in the green line above, the spread between the 10-year Treasury and the 2-year Treasury is now below 0.5%. Historically, **when this yield spread has turned negative a recession has occurred**. Although there have been several historical instances when the yield curve got close to inverting but didn't (e.g 1985 and 1995), the yield curve did eventually invert several years later. While we can't know for certain whether the yield curve will invert this time, we are certainly much closer to an inverted curve than we were several years ago.

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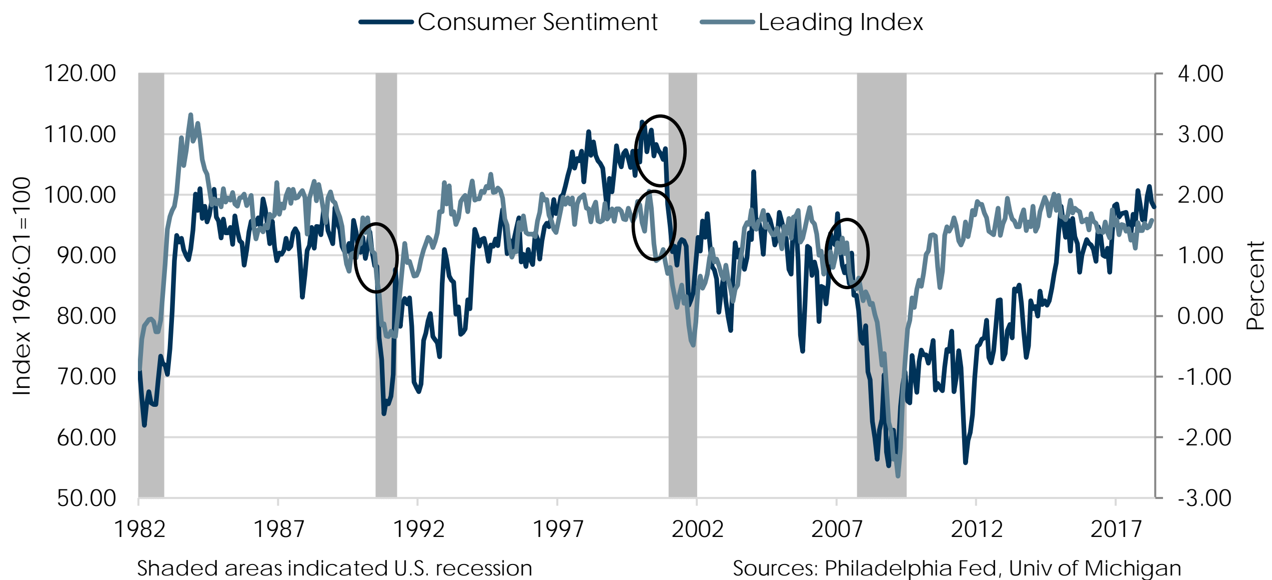
Unemployment has also proved to be a consistent indicator of economic inflection points, as recessions have generally been observed to follow periods when unemployment bottoms and begins to pick back up. This is typically due to upward wage pressures that result from very low unemployment and the effect these pressures have on inflation. Additionally, very low unemployment often occurs when the economy is in "overdrive" as capacity becomes constrained and GDP growth approaches the high end of its historical range. As can be seen from the above chart, unemployment of 3.8% is at its lowest level since the 1970s, and while it could go lower, **we are certainly closer to a bottom today** than we were when unemployment reached 10% back in early 2010.

The predictive power of the yield curve and unemployment have led the Philadelphia Federal Reserve to create a "Leading Index" for each state that incorporates both of these variables, along with housing permits and delivery times from the Institute for Supply Management (ISM) manufacturing survey. These four variables are combined with a six-month economic growth projection to arrive at the Leading Index for each state, which when combined for all 50 states, produces a national Leading Index. The chart below shows the U.S. Leading Index along with the University of Michigan's Consumer Sentiment Survey, which polls consumers every month for their outlook on economic and financial well-being:



Both the Leading Index and Consumer Sentiment tend to track each other, and in the recent past **both measures have exhibited significant declines just prior to economic recessions**. Although there have been periods when both of these indicators have declined without a recession following (e.g. 1995), for the most part these indicators appear to have some predictive value with respect to recessions. Recently these indicators have either been trending up (Consumer Sentiment) or sideways (Leading Index), so they **do not appear to be signaling an imminent recession**. However, we can see that both indicators are volatile and that their **lead time prior to a recession is fairly short**, so investors will need to actively monitor them in order to pick up the next recession signal, when it comes.

Lastly, we consider whether inflation has any value in predicting recessions. Using inflation to identify economic inflection points is more difficult, largely because inflation is sometimes a cause of recessions and at other times it is an effect of policy actions that may or may not be influenced by recessionary environments. Inflation was largely the **cause of the recessions** in the 1970s due to oil price shocks, but in the 1980s it was an **effect of Fed policy measures** which curtailed economic growth. As a result, **inflation has both risen and fallen during recessions**:

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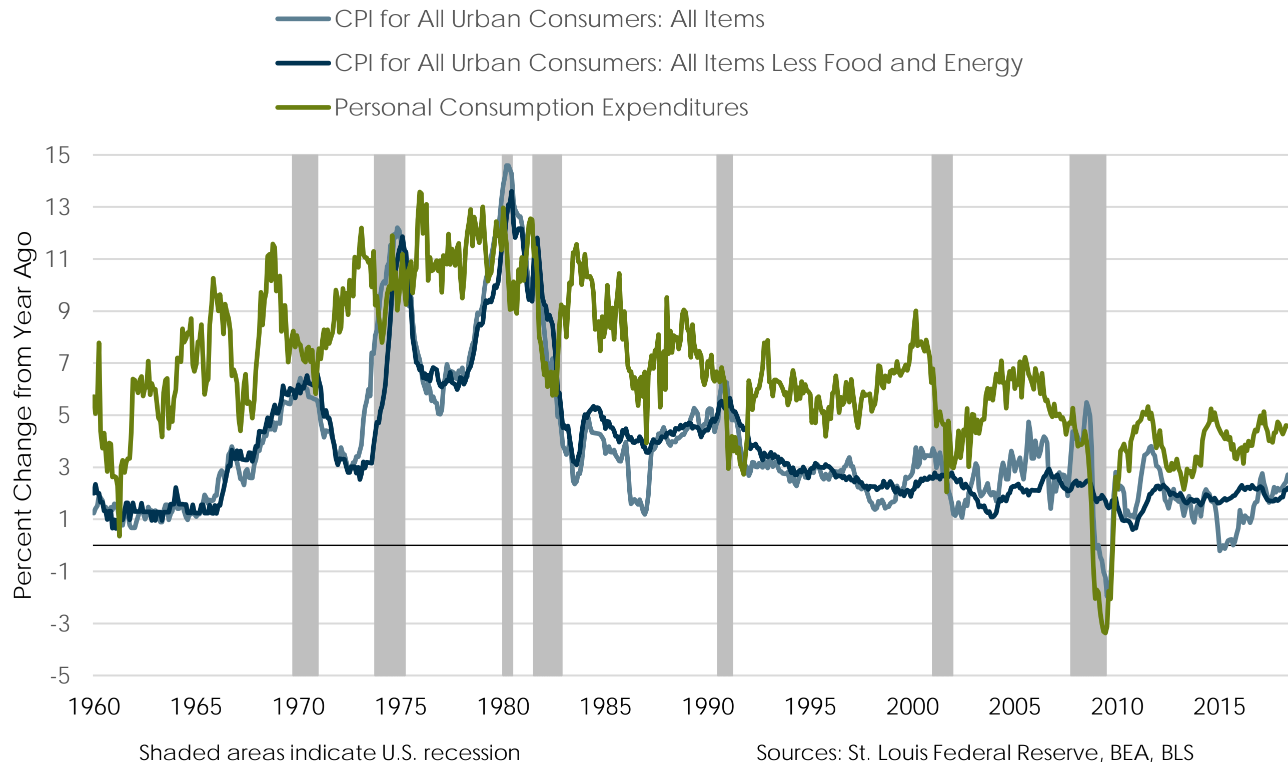
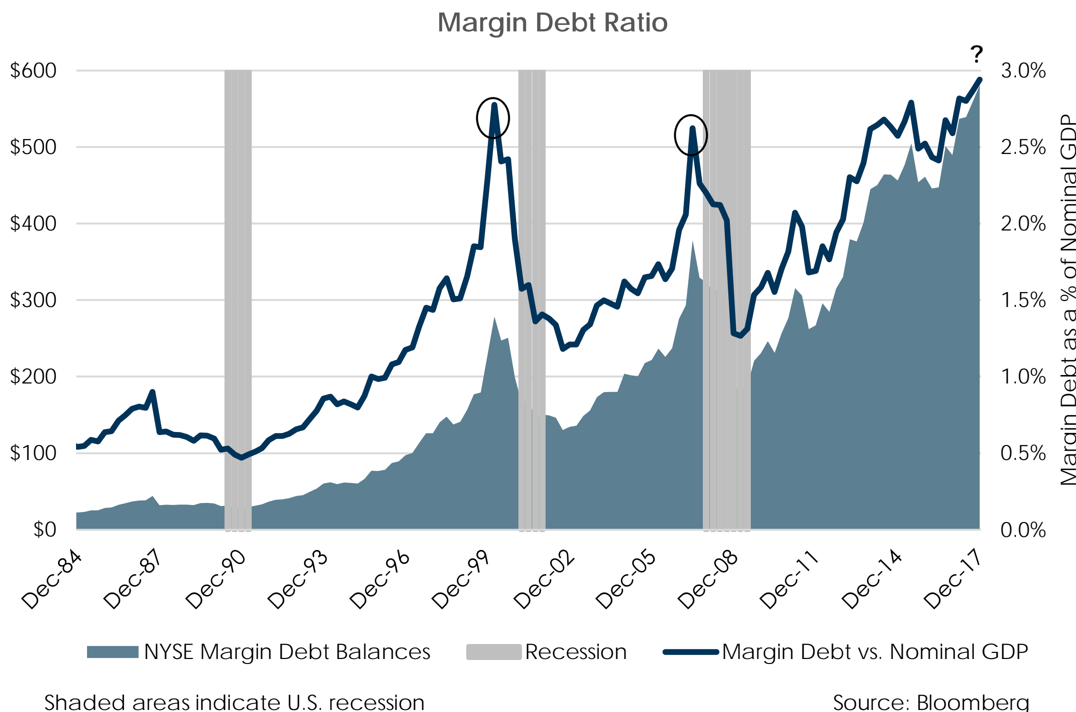


Since the 1980s, inflation has generally fallen during recessions, but there have been a number of periods when inflation fell without a recession occurring. This has been true for both the Personal Consumption Expenditures indicator (the Fed's preferred inflation index) as well as the Consumer Price Index. **While inflation by itself may not be a useful indicator of recessions, the negative economic implication of rising costs can be a contributor to recessions**. From the above chart we can see that inflation today is at historically low levels but has picked up within the last couple of years.

In summary, unemployment and yield curve indicators are implying that we are closer to the end of the current economic cycle, whereas the Leading Index and Consumer Sentiment are neutral to positive. Inflation is low but has recently picked up, although the future trend is uncertain. The probability that the next recession will be caused by hyperinflation (as happened in the 1970s) certainly seems low today, but the fact that inflation is at such a low level means that a small increase may have more impact than in the past.

Market Cycles

If we are getting mixed signals regarding the economic indicators of recessions, what is the market telling us? As previously indicated, the market generally does experience a significant selloff 3-9 months prior to a recession, although sometimes the market sells off for unrelated reasons without a recession ensuing. As we look at prior market selloffs that preceded recessions, we tend to see a **dramatic rise in margin lending relative to GDP**:



Shaded areas indicate U.S. recession

Source: Bloomberg

Unlike measures such as unemployment, which tend to have a normal historical range, margin debt grows over time as the market itself grows. For this reason, we divide the level of margin debt by GDP (which also grows over time), so that we can evaluate the ratio, which has tended to range between 1% and 3% over the last twenty years. As can be seen above, when the margin debt ratio has historically breached the 2.5% level, a market selloff and economic recession have ensued. **Currently this ratio is climbing towards 3% and would appear to be signaling that margin debt is reaching historically unsustainable levels**.

But the margin debt ratio doesn't tell us anything about market valuation, which often reaches historically high levels prior to market corrections. The traditional method of evaluating equity market valuation is to calculate a price/earnings ratio, which represents the multiple of earnings that investors are willing to pay to own a business. When the business outlook is positive and future earnings growth is expected, this multiple increases, and conversely, the P/E multiple contracts when the business environment and earnings outlook turns negative. P/E multiple contraction is a signature feature of market corrections and because it incorporates investors' future earnings expectations, it often precedes a recession.

Robert Schiller, a Yale economics professor and noble prize recipient, has developed a cyclically-adjusted price earnings ("CAPE") ratio that uses an average of the previous ten years earnings as the basis for the P/E calculation. This rolling 10 year earnings approach helps to smooth the volatility that would otherwise result if a shorter time period were used. This ratio is most commonly calculated using the inflation-adjusted historical price and earnings of the Standard & Poors 500 Index, a stock index that generally includes the largest 500 companies in the U.S. and covers approximately 80% of the value of the U.S. equity market.

As can be seen in the chart below, the **CAPE ratio often peaks prior to economic recessions**:

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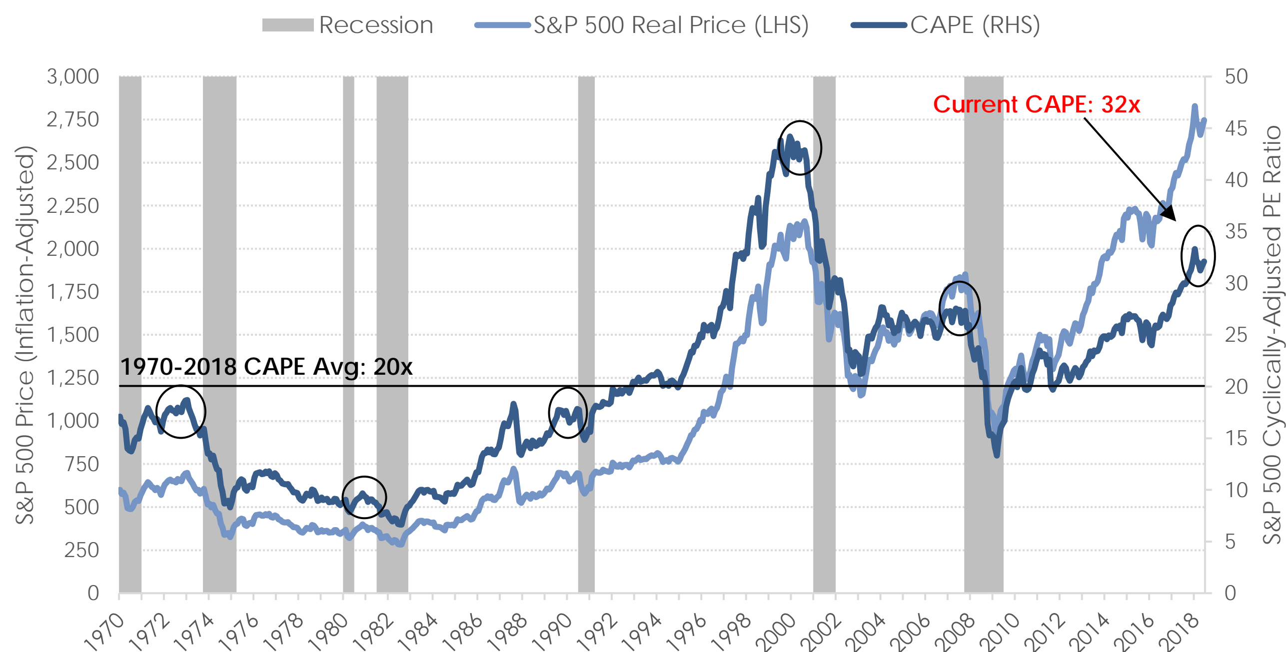

As noted previously, the market selloff in 1987 is an exception as the market experienced a significant decline without leading to a recession. The CAPE ratio tends to move coincidentally with market prices, which is not surprising since it includes market price in its calculation methodology. However, the *level* of the CAPE ratio does provide some insights as **market selloffs tend to occur after the CAPE ratio has reached or eclipsed previous historical averages**. Since 1970, the CAPE ratio has averaged 20x and the all-time previous high was 44x in December, 1999. The recent low was 13x in March 2009, which means the current multiple of 32x has expanded such that it is **72% of the all-time high**. Although the CAPE ratio could continue to move up, the **high current level implies that equity market valuation is closer to a top than it was as recently as two years ago**, when the ratio was at 25x.

When we combine margin debt and market valuation trends with yield curve and unemployment levels, it would appear that we are in the later stages of both the economic and market cycles. Although leading indicators and consumer sentiment are still neutral/positive, these could change quickly and will require active monitoring.

Investment Implications

If investors knew for certain the "party was about to end," what should they do? The natural inclination would be to de-risk the portfolio and move out of equities and into risk-free bonds such as treasuries. But knowing when to sell is only half the battle. When should investors get back into the equity market? What's the penalty for staying risk-averse for too long? Does it even make sense to try to time the market?

To provide some insights into these questions, we constructed two hypothetical portfolios: 1) a diversified portfolio that includes stocks, bonds, long/short equity, and real estate, and 2) a risk-averse bond portfolio that is comprised of 7-10 year U.S. Treasuries. We constructed the diversified portfolio using a mix of equities (60% MSCI All Country World Index, 10% HFRI Equity Hedge Index), bonds (20% Bloomberg Barclays U.S. Aggregate Bond Index), and real estate (10% NCREIF Property Index). We then calculated the growth of each portfolio over the last two economic/market cycles assuming a starting value of $100.

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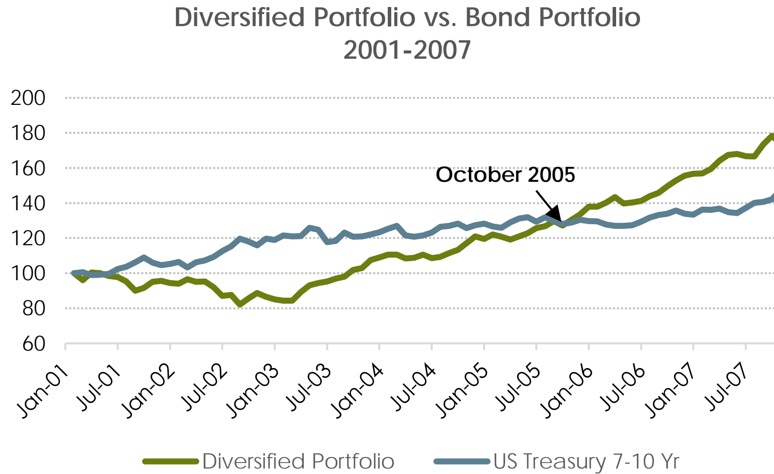
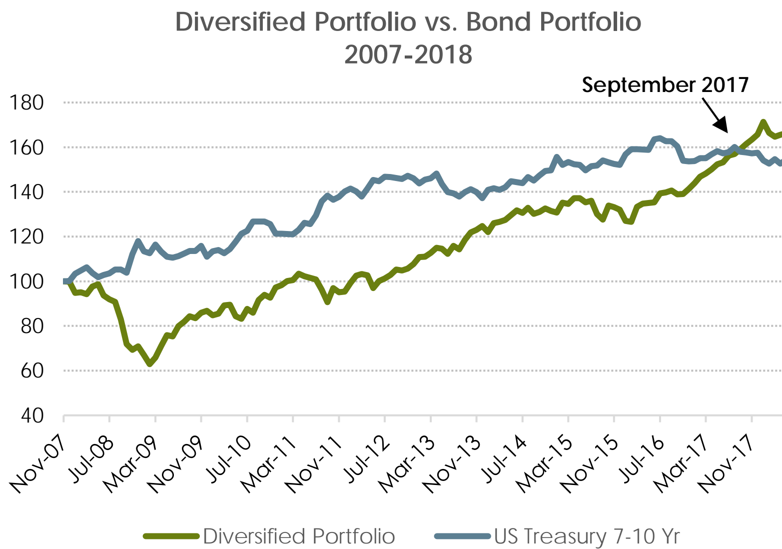
For the recession that began in 2001, we note that the **diversified portfolio catches up with the bond portfolio in just over 4.5 years' time**:



Source: ACG Research, Bloomberg, Morningstar

As we would expect, the bond portfolio protects during the first few years of the cycle, when the economy was in recession and equity markets were declining. But as the recovery takes hold, the diversified portfolio's equity exposure provides for higher returns and eventually the lines cross in October 2005. The diversified portfolio continues to outperform the bond portfolio until the peak of the cycle is reached in late 2007 and another cycles begins.

We see a **similar pattern in the most recent cycle**, although the breakeven point between the portfolios is much longer in this period:



Source: ACG Research, Bloomberg, Morningstar

The portfolios don't equalize until September of 2017, roughly 10 years from the peak of the prior cycle. This is due to the steeper decline of equities in 2008 versus 2000-2003 and to the positive effect on bond returns of accommodative monetary policy post-financial crisis. The 10-year Treasury was yielding 4.5% in October 2007 and by October 2016 the yield had fallen to 1.8%, a drop of 270 basis points. This has begun

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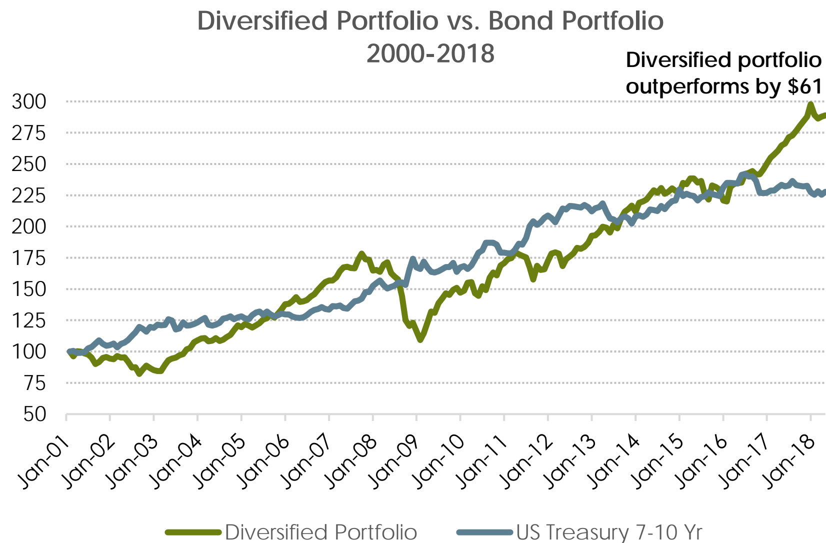
to reverse as the 10-year yield has increased by 100 basis points since the fall of 2016, which has dampened bond returns. This reversal can be seen in the levelling off of the bond portfolio's returns in late 2016 in the above chart. Although ten years seems like long time to wait for a diversified portfolio to outperform, similar **bond market outperformance in the next economic/market downturn appears very unlikely given the low interest rate environment** we find ourselves in today.

Lastly, if we compare both hypothetical portfolios over the nearly eighteen year time period that includes both recessions, we see that the **diversified portfolio significantly outperforms**:



Source: ACG Research, Bloomberg, Morningstar

This outperformance occurs even with the interest rate tailwind that has propelled bond returns over this time period (10-year yields were 5.7% in November of 2000, roughly double today's level). Note also that the diversified portfolio's cumulative performance is equal to or better than the bond portfolio roughly 40% of the time. The normalization of interest rates and bond yields going forward will likely create a bond market headwind, even if yields don't get fully back to their long-term historical averages.

The likelihood of rising rates/yields strongly argues for maintaining portfolio diversification rather than overweighting traditional fixed income as a means of trying to protect portfolio value. In addition, making such a large (but temporary) asset allocation change **requires getting both the entry point and exit point correct**, and this something that is exceedingly difficult, if not impossible, to consistently do.

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