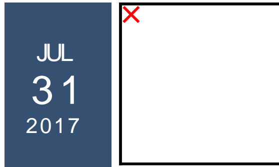
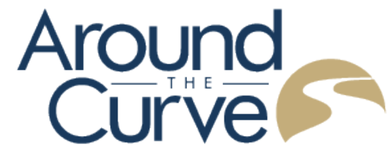




Is the End Near?

J. Patrick Bradley |

As cycles age, analysts, economists, and strategists all look for signs that economies or assets are beginning to get a little long in the tooth. The current U.S. economic expansion, for example, just celebrated its eighth birthday, making it the third longest economic expansion in the post-WWII period. The analytical community is starting to wonder just how long the expansion will last. The same is true of asset bull markets, equities in particular. For a fixed income investor, one might wonder why studying the equity market is important or even necessary. The reason is that equity prices often provide signals about the overall health of an economy. In fact, the S&P 500 Index is a key component of the Conference Board's Index of Leading Economic Indicators, a macroeconomic benchmark that is tracked closely by bond and equity researchers alike.

Like the current U.S. expansion, the current U.S. equity bull market also celebrated its eighth birthday recently in March 2017. This bull market is now the second longest on record, having begun in March 2009. The thoughts of analysts turn to how long the bull market can—or will—run and what that may mean for the U.S. economy. Oftentimes the focus is on valuation. Below we look at equity market valuation to see if we are getting any signals. The period of study is 1980 through the present, since this is the time of an inflation-targeting U.S. Federal Reserve (Fed), structurally falling interest rates, and later, the introduction of unconventional monetary policy.

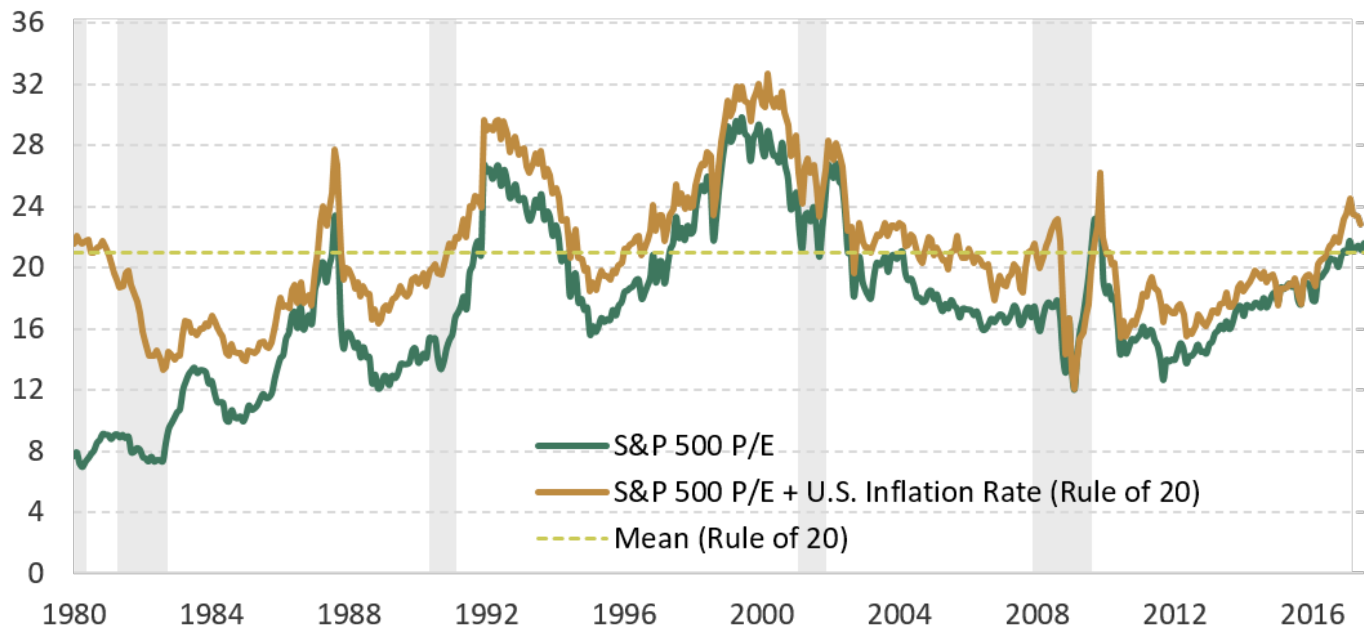
Valuing the U.S. Equity Market

Our analysis utilizes the S&P 500 Index's price-to-earnings multiple (P/E), calculated by taking the ratio of the stock market index to the trailing 12 months' earnings. We look at three "models," including the Rule of 20, the Shiller cyclically adjusted P/E, and an econometric model. The U.S. equity market has been on a remarkable run, as the chart below attests (see Chart 1). From the low in early March 2009, stocks have risen some 247%, compared to the 417% gain from 1990-2000, the longest bull market. The current equity bull market has been fueled in part by the Fed's accommodative monetary policy. There is some concern, expressed by central bankers, this policy is contributing to an asset bubble. Now, monetary policy makers have begun to fret about the impact of monetary policy on equity prices and the implications for both the economy and the financial system. Let us take a look see if there are any troubling signals.

1. The Old Saw. **One old rule of market valuation is the so-called Rule of 20, which is shown in Chart 2 below. The shaded areas represent U.S. recessions. The rule is simple: analysts add the current inflation rate to the market P/E. If the measure is above 20, the market is said to be overvalued. Currently, the P/E plus inflation is about 23.7x, which is above 20. However, during other bull markets the multiple rose well in excess of 20 before the stock market left the bull phase, as seen in early 2000 during the tech heyday.**

Chart 2: Rule of 20 Versus S&P 500 P/E

As of 7/25/2017



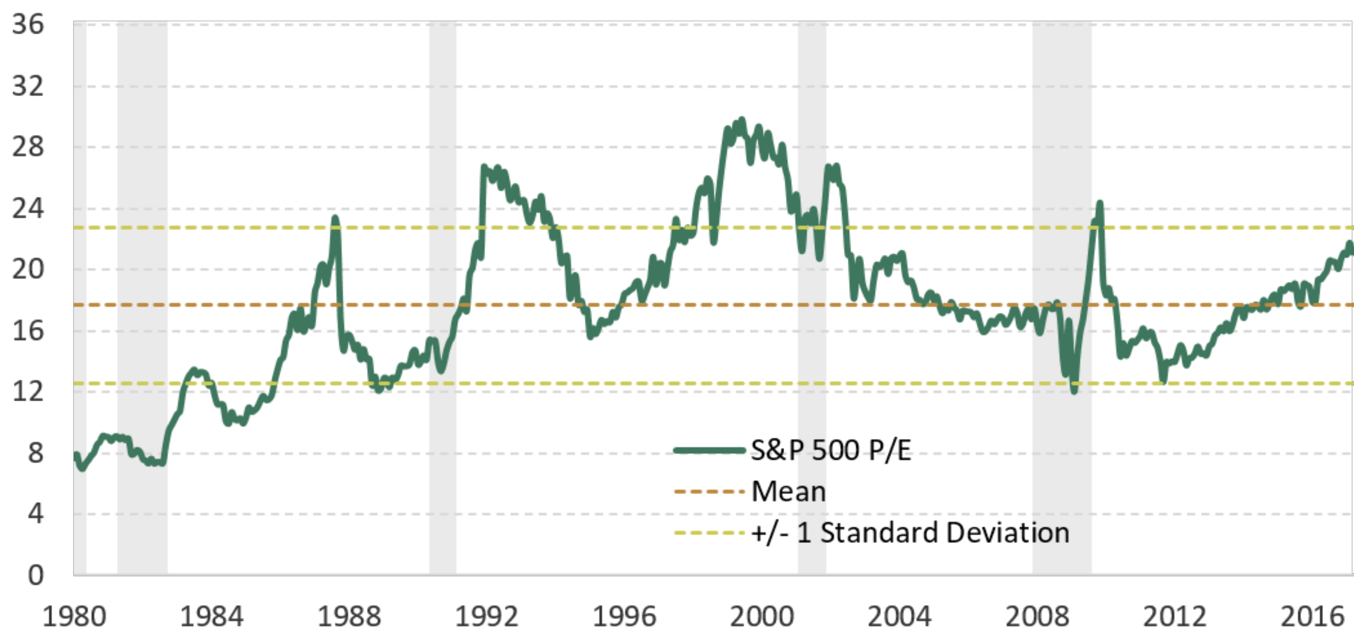
Shaded areas indicate U.S. recession.

Source: Bloomberg (© 2017, Bloomberg Finance LP), Thomson Datastream

2. The P/E and Cyclically Adjusted P/E. **The two charts below compare the P/E, as defined earlier, and Nobel Prize winner for Economics Gary Shiller's cyclically adjusted P/E (CAPE). This calculation takes earnings over 10 years and deflates those earnings using the consumer price index (CPI). Next, the 10 years of earnings are averaged and used to calculate the CAPE. What the Shiller P/E does is dampen the volatility of the multiple through the inflation adjustment and the averaging of earnings over a cycle. The conventionally calculated P/E can give a confusing signal about valuation, like in the early 1990s when stocks looked expensive but earnings were depressed and set to rebound. At the time, CAPE, while moving higher, did not indicate the same degree of overvaluation. The market also looked expensive in 2009, again due to depressed earnings, based on the P/E. However, CAPE indicated an opportune time to shift into equities, as the global financial crisis was ending. Currently, both measures indicate overvalued markets and, perhaps, heightened risk. CAPE is at +1 standard deviation of its mean, a value last breeched during the tech bubble. Both measures appear to be flashing warnings.**

Chart 3: S&P 500 Index—P/E Ratio, Average of Period

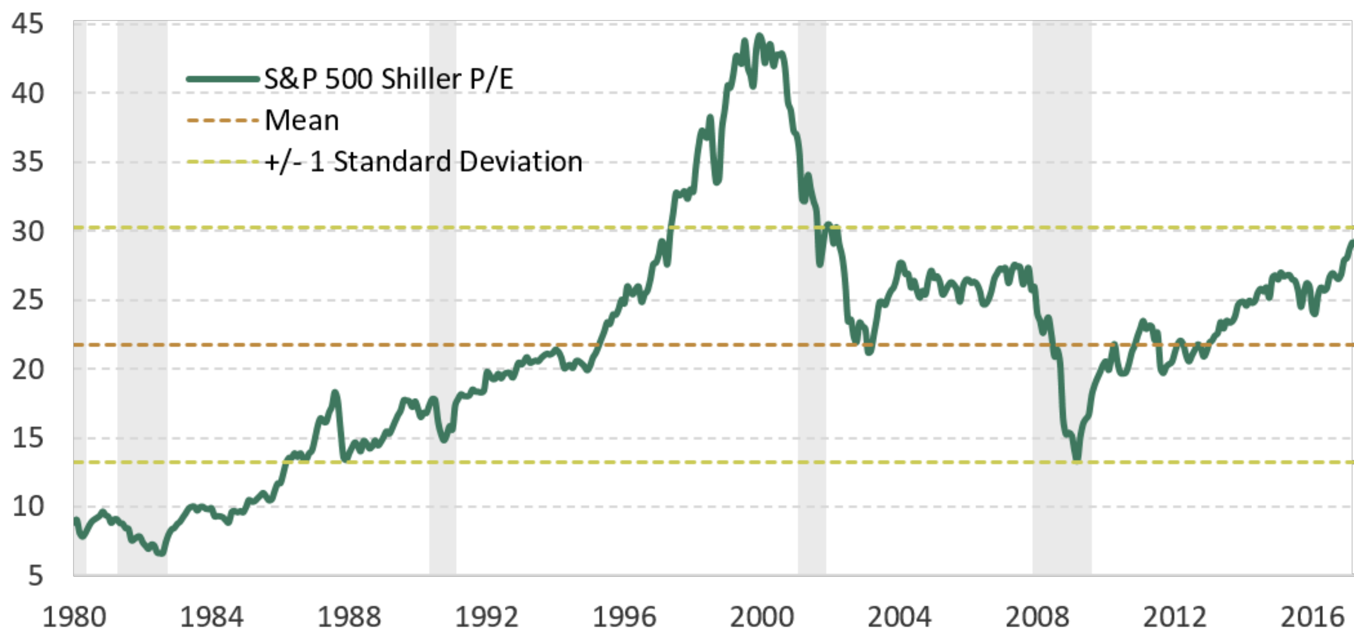
As of 7/25/2017



Shaded areas indicate U.S. recession.
Source: Bloomberg (© 2017, Bloomberg Finance LP)

Chart 4: S&P 500 (Shiller)—Cyclically Adjusted P/E Ratio

As of 7/25/2017



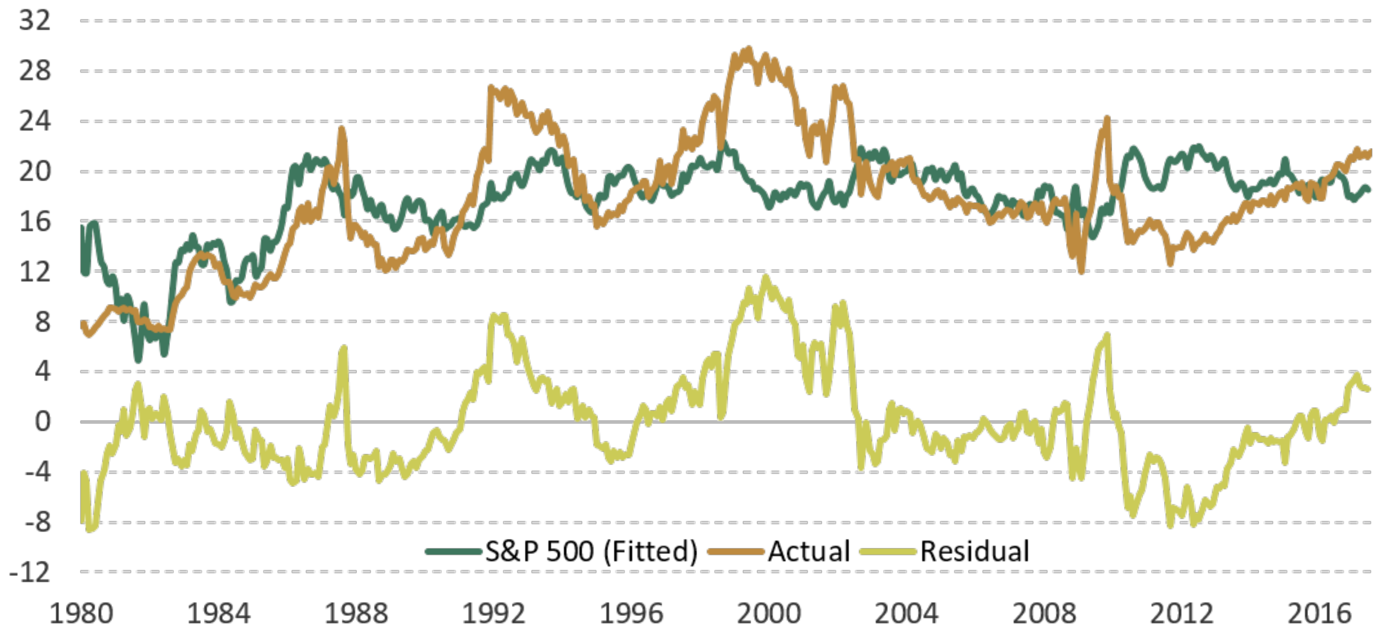
Shaded areas indicate U.S. recession.
Source: Bloomberg (© 2017, Bloomberg Finance LP)

3. The Econometric Analysis. **The last cudgel we will take up is a valuation analysis utilizing a single equation model, setting the conventional P/E as the dependent variable explained by several macroeconomic variables,**

including industrial production, the consumer price index, and the 10-Year Treasury note. The R^2 was around 40%, meaning 40% of the variation in the P/E is being explained by the model, and the explanatory variables were all statistically significant. Chart 5 compares the simple difference between the actual and fitted values originating from the model. The model is currently indicating that the market P/E is higher than that suggested by the macroeconomic variables. The model also does a reasonably good job of identifying periods of extreme over- and undervaluation. It can also provide some idea of the impact of changes in explanatory variables. Economic growth, as measured by industrial production, has a positive influence on the P/E. Interest rates, however, exhibit a negative relationship. Hence, higher interest rates, other things being equal, could cause the P/E multiple to compress.

Chart 5: P/E and Macroeconomic Variables

As of 6/30/2017



Shaded areas indicate U.S. recession.

Source: Bloomberg (© 2017, Bloomberg Finance LP), Thomson Datastream, Haver Analytics

Conclusion

The various measures for determining P/E do indicate when markets reach extreme periods of both under- and overvaluation. For example, the Rule of 20 depicted an undervalued equity market as the economy emerged from the 1982 recession, a feat it repeated as the Great Recession was painfully ending. All the models show when risk continues to creep into the equity market; however, none are particularly good at timing when a bull market ends—or when a bull market may be about to begin. Markets can remain expensive or cheap for long periods of time before the turn actually arrives. Therefore, the stock market multiple should be utilized as a gauge, not as a de facto signal or trigger. Experienced investors generally know what to do in expensive markets and inexpensive markets. The former suggests a defensive posture while the latter implies a more aggressive or risk-on posture. The period we reviewed represented a time of inflation-fighting central banks and structurally lower interest rates. Now, the tailwinds behind the current bull market could be reversing and become headwinds. The Fed has been raising its policy rate and is about to begin reducing its balance sheet. That could mean higher interest rates, which would lead to slower growth, affecting profits. The P/E models may not be telling investors the end is near, but it could just be approaching.

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